2: Jochelson E-5 (1884-1902) 1933 Yakut

Kolymsk every summer, bringing flour and other commodities for sale or exchange for furs.

Cultivation of Meadows

The cultivation of meadows consists in the use of grass land for the maintenance of horses and horned cattle. The long and severe winters necessitate the storage of food for domestic animals and hay is the only available forage in Yakutsk Province. In summer the animals are put out to pasture. The meadows are extensively exploited. The grass is cut with sickles. It is of poor quality because none is sown. The quantity of hay needed for the long winter is enormous and the entire short summer is devoted to haymaking. The hay is of uneven quality. There are many late over-ripe grasses; some of the hay is cut during the rain and is consequently an unsubstantial food for the animals. There are no exact data on the quantity of hay usually stored, but, according to some investigators of Yakut economic life, they obtain about 50 per cent of the necessary hay. Despite vast areas of grass lands, the domestic animals will continue to suffer from the scarcity of hay until grass sowing is introduced.

Domestic Animals

Horse and Cattle Breeding. The first travelers and investigators of Yakut Province reported that the primary occupation of the Yakut was the breeding of horses and horned cattle. Driven from the south to their present abode by Mongol-Buryat hordes, the Yakut wandered with their droves of horses and herds of large horned cattle. The former inhabitants of the country, forced farther south by the Yakut, continued their hunting life, and at the same time kept their reindeer and driving dogs.

Historical data for the last two centuries show that the two branches of Yakut animal industry have developed in the direction of increasing the number of horned cattle at the cost of the number of horses. Originally, horse-breeding predominated among the Yakut, now the number of horned cattle is much larger than that of horses.

The following table shows the average number of horses and horned cattle in the three southern districts (Olekminsk, Yakutsk and Viliuisk) for the years 1901–1910 and 1917.

	1901–1910	1917	1925
Horned cattle	304,851	482,005	
Horses	108,942	128,465	
Total	413,793	610,470	536,589

492

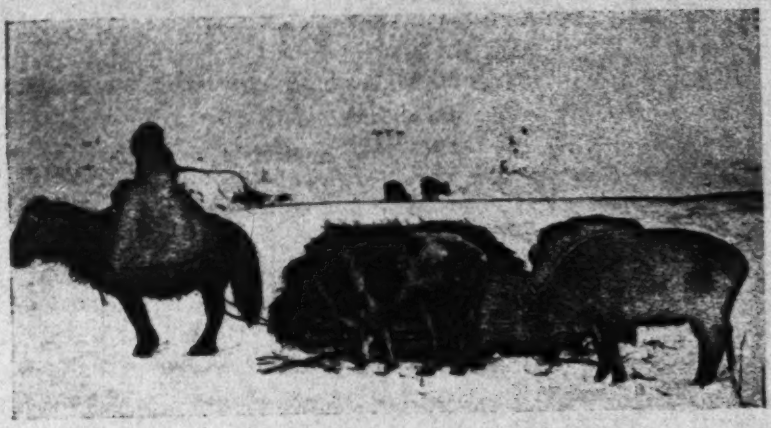
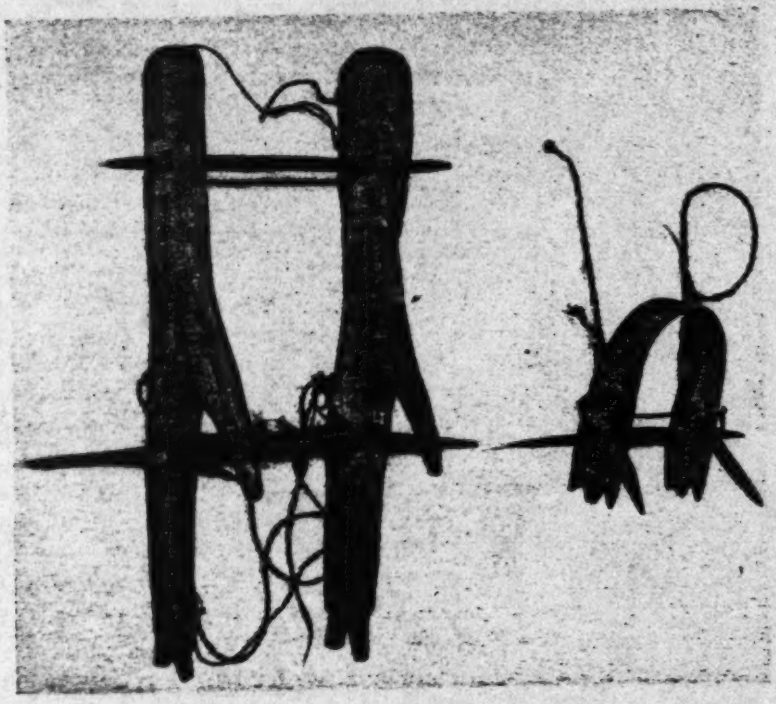


Fig. 79. A Sledge Load of Hay being reduced by the Nibblings of the Always-Hungry Cattle. The sledge is attached to the rider's saddle by means of a thong.

233 ●



a *b*

Fig. 80 *a* (70-8900), *b* (70-8901). Muzzles for Young Domesticated Animals. *a*, Muzzle for a calf to prevent it from feeding; *b*, Muzzle for a year-old colt.

2: Jochelson E-5 (1884-1902) 1933 Yakut

● 233 173

In 1917 there was an increase in horses and horned cattle as compared with the preceding years. In 1925, after the revolution, the number of both decreased.

The census of 1917 showed that each Yakut household of the southern three districts had an average of 9.3 horned cattle and 2.4 horses. The two northern districts, Verkhoyansk and Kolymsk, had in addition 1.758 driving dogs and 18.148 reindeer, 5.485 horned cattle, and 4.886 horses per household. The inhabitants of Yakut Province have, on the average, twice as many horses and five times as many horned cattle as the population of the rest of Russia.

The Yakut domesticated animals were originally obtained from the Kirghiz, but have deteriorated in the far north. They are smaller and

[492]

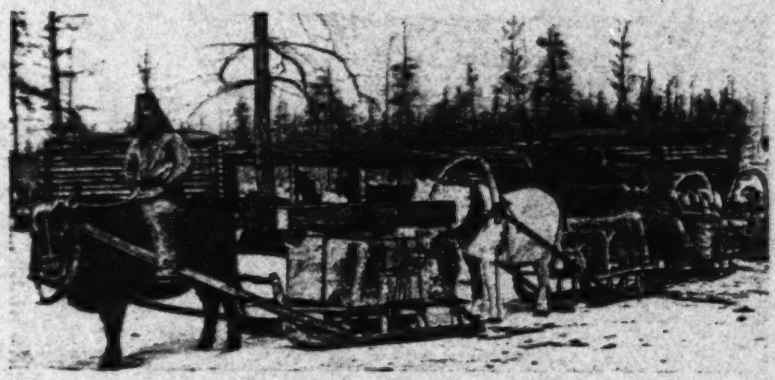


Fig. 81. The Method of Transporting the Museum Collections from the Verkhoyansk Mountain Ridge to Yakutsk City.

less prolific than the original strain. The average weight of a living ox is 320 kilograms and of a cow 220 kilograms, while the corresponding weights of a Kirghiz cow and ox is, on the average, 900 and 560 kilograms.

The average annual milk product of a Yakut cow is only about 560 kilograms, but the fat content is relatively high, from 5 to 7 per cent.

That the Yakut horned cattle are small and less productive may be explained by the unfavorable conditions for food and shelter. The cattle are put out to grass pasture from June to October. Two-thirds of the year, as the result of the long winter and severe frosts, they are sheltered in stalls, where they receive very scanty rations of hay, often of poor quality. In addition, the stalls are small, dark, and dirty.

[233] [493]

Reindeer Breeding. The domesticated reindeer is reared in the northern districts of Yakut Province, chiefly by the Chukchee, Koryak,

2: Jochelson E-5 (1884-1902) 1933 Yakut

Tungus, Lamut, and Yukaghir. But the northern Yakut also keep reindeer for driving as well as riding and have also introduced advanced methods in reindeer breeding. The Yakut reindeer is taller and stronger than that of their neighbors. Reindeer breeding is, nevertheless, a secondary occupation. Rich Yakut reindeer owners do not wander with their herds, but hire special Tungus herders. The Yakut herd owners lead a sedentary or semi-sedentary life.[1]

According to official statistical data for the end of the nineteenth century, there were, in Siberia, about 20,000 reindeer, of which number the Yakut owned a little over 15,000.[2]

Dog Breeding. The rearing of driving dogs is concentrated chiefly in the northern and northeastern parts of Yakut Province. In 1910 there were about 1,762 driving dogs in the Kolyma District and about 470 in the Verkhoyansk District, a total of 2,232. But there are no data as to the number of dogs owned by the Yakut alone. In the Kolyma District it was estimated that there was one dog to every twenty-four inhabitants and in the Verkhoyansk District, one to every eight.

Breeding of Swine, Sheep, Fowl, and Bees. These branches of farming are maintained, to a small extent, chiefly by Russians, in the southern cities. According to the census of 1917, there were 1148 swine: in Yakutsk District, 1020; in Olekminsk, 124; and in Viliuisk, only 4. Although sheep were introduced in Yakutsk Province in the middle of the nineteenth century, they did not increase much in number. In 1917 there were only 354: in Yakutsk District, 313; in Olekminsk, 37; and in Viliuisk, 4. Fowl (hens, ducks, geese, and turkeys) are kept only in the cities and chiefly for their eggs by Russians.

Not far from Yakutsk, the *skoptzy*[1] made unsuccessful attempts to rear bees.

[1] [A Russian religious sect -- ANALYST]

[1] For particulars as to different types of reindeer breeding see Jochelson, Yukaghir.
[2] In the opinion of the author the total number of reindeer in Siberia, in general, as well as the number owned by Yakut, are greatly under-estimated in the official reports.

17: Erman--272-273 N-3 (1828-29) 1850 Yakut-1-2
116, 233, 174

"The Yakuts living in the 62d degree of latitude, have far more trouble in keeping their cattle, than any other people devoted to the same kind of husbandry. They make long journeys to collect hay for the winter, yet they do not always find enough of it, but are often obliged to feed their oxen, from March to May, only on the willow and birch twigs, which they procure on the islands in the Lena. The further we examine into particulars, the greater must be our surprise, when we behold here for the first time, a thriving cattle-husbandry in the midst of deep snow and under terrible frosts; we involuntarily ask ourselves, how it came to pass that the Yakuts attached their existence to a domestic animal which is found nowhere else in Asia, under the same circumstances of climate. They have themselves a tradition, that they once brought their herds down the Lena, in boats from the sources of the river: but this is assuredly no explanation; it is only a proof that they are themselves sensible of the contrast between the climate they dwell under, and the nature of their domestic animal. I might more reasonably hold the cattle here to be a bequest from a preceding period; that is to say the rem[273]nant of a wild breed, which, in earlier periods of the earth's history, occupied this region in particular. The skulls of wild cattle are found very often in the Lena, and the lakes in the neighbourhood. Living and untamed individuals are to be seen beyond Behring Straits, on the coasts of Hudson's Bay; and doubtless, those dead cattle, as well as these living remnants, all belong to an age of the world, when the northern parts of the earth had a much milder winter than at present. There remained

17. Erman--272-273 N-3 (1828-29) 1850 Yakut-2
116, 233, 174

here, instead of the long-haired American bison, the scattered bones of that original breed, and, thanks to the care of the Yakuts, their degenerated herds."

24: Wrangell--166-167 G-3 (1820-23) 1842 Yakut -1-2
116, 161, 177, 233, 756, 847

"The Jakuti who live on the banks of the Kolyma are not the original inhabitants of the country; their predecessors were the Omoki, the Schelagi, the Tungusi, and the Jukahiri. The Omoki, who were settled fishermen, and the Schelagi, who were a nomad people having reindeer, have so wholly disappeared, partly from wars with intruders, and partly from devastating sickness, that their names are now scarcely remembered. The Jukahiri, also, who were once a numerous nomade race, have greatly diminished. Most of them, having lost their reindeer by disease, now live poorly as fishermen along the banks of different rivers; while a few, who have preserved their reindeer, have withdrawn with them into the tundras near the sea. The Jakuti alone have not only kept up their numbers, but have advanced very considerably in population, and [167] in the cultivation of the soil. To them belongs the merit of having introduced the rearing of cattle and horses, and other branches of rural industry, into a region where the soil, and still more the climate, appeared to forbid all such attempts, and thus securing not merely a subsistence, but some degree of comfort. They may be said to have rendered these inhospitable steppes accessible to the intrepid descendants of Jermak, who have brought with them Christianity, and rescued an ignorant and superstitious people from the delusions of Schamanism and its barbarous customs. (1)

1. It was a frequent practice to expose new-born female children in baskets, suspended from the branches of trees. Sometimes it

happened that, before the infants perished from cold and hunger, they were found and adopted by strangers, and old women are still to be met with in families of which they became members in this way.

The Jakuti are now all baptized. A priest from Sredne Kolymsk visits these settlements every year. An ecclesiastic named Slezzow, who resided here twenty years ago, manifested great courage and zeal in abolishing Schamanism. Wherever he found any idols or heathen altars, he caused them to be destroyed by fire or thrown into the water, and none such are now to be met with. There are still, however, as I have noticed in a former chapter, schamans, who continue to have a few adherents, and are generally consulted, and even by Russians, in regard to finding a stray beast or discovering stolen property."

24: Wrangell--167-168 G-3 (1820-23) 1842 Yakut
116, 233, 262, 731

"As their horses subsist during winter on the grass which they find under the snow, the Jakuti migrate in spring with their herds, in order to leave the pas-[168]ture in the neighbourhood of their winter-dwellings undisturbed. The number of horned cattle they can keep depends on the quantity of winter-forage which they are able to obtain, and nothing can exceed the industry with which they pursue this most important object during the short summer. Throughout the whole of the hay-making season they live almost entirely on kumyss, of which they drink great quantities. It agrees with them remarkably well, and they grow fat and strong with scarcely any other food. One of the greatest disasters which can befall them is a sudden and early winter, cutting short the hay-harvest. Such was the case the present year. A keen wind from the northwest set in on the 22nd of August, with a heavy fall of snow, which covered all the hay remaining in the meadows; and as only part of it had been stacked, the loss was very great. It was followed by such severe cold that the lakes froze, and troops of wolves came out of the forest and carried off above eighty cows. At the same time, the Kolyma was so unusually swollen that the fishery in a great measure failed. A winter of scarcity, therefore, seemed inevitable; but nothing appeared to distress the herdsmen so much as being obliged, on account of their insufficient store of hay, to diminish still farther the number of their cattle, so many of which they had already lost by the ravages of the wolves."

24: Wrangell--292 G-3 (1820-23) 1842 Yakut
116, 136, 226, 233

"The people about Werchojansk are Jakuti, and their chief occupation is the care of cattle, to which the hilly country and the milder climate of the sheltered valleys are very favourable. There is also much less snow here than in other parts of northeastern Siberia, so that the cattle can be left out in winter, and find sufficient pasture. This is the more important, as from the very dry summers the growth of grass is never such as to afford a good stock of hay. There are, generally speaking, fewer lakes abounding in fish than in the Kolyma district; but some of them are so full of small species of fish about two inches in length that they may be scooped out of the water with buckets. These little fish, which are preserved for the winter by being frozen, furnish a very good article of food, pounded and boiled with the finely-grated inner bark of the larch-tree. Hunting is much followed: hares and grouse abound, and the country is rich in fur animals; elks, reindeer, black bears, wolves, musk deer, red foxes, ermines, wolverines, and squirrels of the most valuable kinds, are all numerous; but black foxes are rare, and sables are not found here. The musk deer (moschus moschiferus), called here kabarga, must be abundant, as a pound of musk is commonly sold for no more than from ten to fifteen roubles."

27: Coxwell--262 [2] B-3 (no date) 1925 Yakut
116, 174, 233

"The Yakuts at one time lived in a region round Lake Baikal, but were pushed northwards by the Buryats and, from having been horsemen and herdsmen like the Kirghiz, they have learned to give their attention to fishing, hunting and reindeer breeding. They can keep their cattle and horses alive in the Polar circle, and have milch mares which afford as much milk as cows."

39; Jochelson E-5 (1888-97) 1906 Yakut

dress and dress-ornamentation of the Tartaric peoples, the dualistic religious ideas, and the poetical folk-lore, of Western Asia.

In their old country they were principally horse-breeders. The horses were employed both as beasts of burden and as animals for riding; their skins were used for clothing; their flesh, for food; and kumiss, the fermented drink prepared from mare's milk, served not only as a stimulating beverage, but also as a most important nutritious food.[1] For a time after their arrival in their new abode, the horse was still their principal domestic animal, and kumiss their essential food; but gradually the climatic conditions of the country on the one hand, and contact with Russian culture on the other, have exerted a modifying influence, which is still operative, over both the mental and the material culture of the Yakut. A small part of the tribe in the extreme north of the Yakut province must have experienced a decadence of their former material life. This minority became reindeer-breeders, dog-breeders, or hunters, and fish-eaters. But even into these new lines of life the Yakut introduced more advanced methods.

The tribe as a whole, while engaged in horse and cattle breeding as their chief occupation, began to increase the number of their horned cattle at the expense of their number of horses. Of cow's milk they could make, for use during the long winter, butter, a kind of cheese, and some other milk products which cannot, as we shall see later, be made from mare's milk. The Russian gold-mining companies on the rivers Olekma and Vitim proved profitable buyers of these cattle, and this gave an impetus to the raising of them. Finally, the cultivation of cereal plants, borrowed from the Russians in the southern parts of the Yakut Province, where the climate allows of it, has made such progress in the last twenty years, that at present agriculture is the chief occupation, and bread the staple food, of many Yakut families of the District of Yakutsk, and particularly of that of Olekminsk. Nowadays large droves of horses, and

[1] Some travellers consider that the Yakut horse belongs to the present race of horses of the steppes of southwestern Siberia; but it is difficult to say whether the Yakut horse of to-day has any connection with the extinct horse, the fossil remains of which have been found in the polar regions of northeastern Siberia.

/184 cont./

224 caught in traps, but is also dug out of its den, as we ourselves had
[435] an opportunity to observe on our return journey. The price of a good skin here yields on the average about a ruble, but many different kinds are distinguished according to quality, and the poorer ones are valued at only half a ruble; the winter pelts are, of course, the best. The highly prized blue variety of the arctic fox seems
[651] to be practically unknown here. The crown tax as well as the goods purchased from the merchants are paid for with the skins of the arctic fox.

[543] Around Easter a kind of annual fair is held here, at which appear both the inhabitants of the islands lying in front of the mouth of the Olenék and those from the nearest settlements of the forest region, in order /185/ to trade skins for the necessary commodities
[571] from the traders -- tobacco, tea, cloth, ironware, etc. Despite the inhospitable climate the people here seem to be well off and
[512] very content. Even during the dark months they go about their
[132] activities out in the open, especially fishing, and only about the time of the reappearance of the sun, around the Day of the Holy Three Kings (sixth of January, old style), when the most frightful snowstorms set in, do they shut themselves up completely -- often
342 for a couple of weeks -- in their dwellings. The latter are much
362 more solidly built than in the forest region, in order to offer suf-
313 ficient resistance against the force of the storms. The material for building as well as for heating consists of driftwood which is supplied by the river and even more by the ocean. Besides the
797 merchants, Boljkalák is also visited almost annually by a missionary, who holds services in the chapel here. Chitrow praises the devoutness of the people -- the outward signs of this did not remain unnoticed by us either.

554 On the day after our arrival the elder (stárosta) of the
292 Kangaláss Jakuten /Yakut/ appeared with fresh reindeer for the
123 return journey. He ranked higher than both the local elder and the one accompanying us and wore, as a mark of distinction, a sort of uniform, a yellowish gray cloth coat with red trimming
● 233 and a gold-embroidered belt with a short sword. The new reindeer, which had to be given a day of rest, and the previous ones

/185 cont./

233 that had brought us here were led a few versts farther to the right
[182] shore of the Olenék, where there was more food for them. Lack of fodder for the reindeer is the principal reason why the inhabitants here do not keep them as draft animals, but instead use dogs, which, because of the great quantity of fish food that they need, are very troublesome, particularly in years when fish are not abundant. Our host here has a /186/ splendid herd of reindeer, which, however, he keeps with friends in the forest region; aside from the lack of food, the wolves, for which we too had to keep a nightly watch during the trip on the tundra, and in the winter the violent snowstorms, are a danger to the reindeer.

123 During our stay we received many presents of fish and arctic fox skins -- probably not the best, inasmuch as it was seen that we were not experts -- indeed, even garments that were no longer new, which, however, we refused. The people were generously compensated for this with tobacco, tea, sugar, ammunition, axes, and similar articles, in spite of their protests that they did not
431 expect anything at all in return. The custom of giving and re-
571 ceiving presents during visits is widespread everywhere here, and while it is possible that those in higher positions, especially the local administrative officials, do not count on any return gifts, those of the same standing not only desire, but demand them, and it even happens, as Chitrow tells, that such mutual assurances of esteem end in lawsuits because one party is dissatisfied.

122 On the morning of October 23 our narten stood before the door ready for travel -- nothing held us in the north any longer; we left the village at a rapid trot, accompanied for a stretch by the population running alongside. We were going south, following the birds of passage that had hastened on ahead of us long ago -- they had reached their goal long since, but we were still far away, frightfully far! Our stations were the same as before up to the Pur; we traveled as quickly as possible, since nothing held
[137] us any longer. Czekanowsky only took along a couple of trunks from stunted larches, which were growing in the middle of the tundra in the protection of river valleys; the largest was as thick as an arm and barely ten feet tall, but of a considerable age.

177 206 207 taken place in such forms of communication as radio, telegraph and telephone. Compared with 1940 the number of radio points in 1952 was more than doubled. By this time communication had been established between Yakutsk and rural localities and machine-tractor stations, and 225 nasleg soviets had been linked by telephone. Many rayons and nasleg soviets are now equipped with radios.

205 The extent of the postal routes is 65,000 kilometers, practically twice the length of the equator.

Towns and Cities

633 The capital of the Yakut ASSR is the city of Yakutsk, which used to be the oblast center. Here are concentrated the most important Yakut Republic offices, ministries, banks, scientific institutes, and higher and secondary schools. During the Soviet period Yakutsk has been turned into a major industrial center. The water system laid in Yakutsk has the deepest water-intake point in the world. The problem of obtaining subsoil water for this water system was an extremely difficult one because of the permafrost. Engineers worked hard to solve this problem even before the Revolution, though never successfully. Soviet technicians and working people have solved it. Subpermafrost water is now fed into the main water supply. Stone bathhouses, mechanized laundries, barbershops and other such enterprises for the personal use of the population did not come into being until the Soviet regime. The streets of the city are paved with wood blocks and sidewalks have been constructed. Yakutsk is rapidly developing.

[365]

Over the last few years Yakutsk has been changing from wooden buildings to brick and sometimes reinforced concrete buildings. Bus routes between the city and neighboring regions are now in operation.

871 368 In Yakutsk there are 22 secondary, seven-year and primary schools. They are attended by about 9000 children. In the city there are 16 tekhnikums, various courses, and a pedagogical institute, a Yakut Theatre of Music and Drama, a Russian drama theatre, two movie houses and seven clubs. The Pushkin Science Library, the Yaroslavskiy Yakutsk Regional Museum and the Yakutsk Museum of Fine Arts are great favorites with the citizens.

743 744 There are hospitals in the city and it is also there that the research institutes and laboratories are to be found. In 1947 a research base of the USSR Academy of Sciences was opened there, and in 1949 it was turned into the Yakutsk branch of the Academy. In the same year there was opened a Yakutsk branch of the Tuberculosis Institute of the Academy of Medical Sciences.

Agriculture

241 233 565 In pre-Revolutionary Yakutiya the poor and middle peasant families totaled more than 80 percent of all households. One-seventh of all the households were entirely without sowings, and many were only able to sow a few hundredths of a hectare each. Most of the households (97 percent) had to do without factory-made agricultural implements. Stockbreeding produced extremely poor results. The owners of large areas of land and abundant livestock i.e.,—the kulaks and toyons, grew rich, but not so much by raising the level of land cultivation and animal husbandry as by exploiting the poor and middle peasants.

53: Tokarev and Gurvich E-4 (no date) 1964
RV2 Yakut RV2

During the first two years of the Soviet regime the situation hardly changed for the better. There was redistribution of the land in 1923–24, but the reform only partly cut down the amount of land used by the toyons and virtually made no difference to the burdensome state of the poor people. For example, the nonrepartitional land expropriated by the toyons on the basis of their "clearing right" was left in their possession. It was only the second land reform of 1929 that put an end to toyon coercion and created a situation in which the agriculture of Yakutiya could be improved. About 150,000 hectares of the best land, formerly owned by the toyons and kulaks, then passed into the hands of the working peasantry.

A collective-farm movement among the Yakut workers began in about 1930. In 1929 only 3.6 percent of the households were collectivized; by 1932 the figure was 41.7 percent, and by 1947 collective farms united 98.7 percent of all the households in the Yakut Republic. Collectivization gave a powerful impetus to the development of land cultivation, which prior to the Revolution had only advanced at a snail's pace. The sown area in Yakutiya had increased to 92,000 hectares by 1946, as opposed to 37,000 in 1917. Machine-tractor stations provide great assistance to the collective farms. Several hundred tractors, many combines and trucks are now at work in the fields. More than 20,000 agricultural machines are in operation. Trained teams of Yakut tractor-drivers, combine-operators, drivers and mechanics have begun to appear. Great advances have been made in the field of agricultural techniques. Particular attention has been given to retention of the moisture in the soil. The climate and soil conditions of Yakutiya make agriculture particularly difficult. In addition to the frequent droughts and spring frosts, some of the lakes dry up and deprive whole settlements of water. Over the last few years the Yakut collective farms have worked very hard to organize irrigation and flooding.

Many farms use water wheels and pumps to water their gardens. In 1952, more than 300,000 hectares of land, chiefly green meadows and pastureland, were irrigated by means of both permanent and temporary installations. The first specialized meadow-reclamation station had been set up in the Gorniy Rayon.

In 1952, M. G. Yegorov, member of the New Life collective farm in the Megino-Kangalasskiy Rayon, was awarded a Stalin Prize for the introduction of more modern methods in vegetable-growing on Yakutiyan collective farms. In the rigorous Yakutiyan climate Yegorov had been gathering 300–350 tsentners of cabbage, 180–190 tsentners of cucumbers, 170 tsentners of carrots, and 130 tsentners of tomatoes each year per hectare. In 1956 he was awarded the Order of Lenin.

Nevertheless, animal husbandry is still the chief branch of agriculture in Yakutiya. Poorly productive livestock was a legacy received by the collective farms from the past. The milk yield per cow averaged only 600 kilograms of milk per year. The Yakut farmers struggled hard for complete reorganization of their animal husbandry. The productivity of the cattle was improved throughout the Republic by crossbreeding. Techniques for the maintenance and pasturing of cattle were radically changed. Many standardized cattle-yards of an improved design were built. The work of the milkmaid was mechanized on many collective farms. On account of the extensive clearing of meadowland, the farms are in a position at the present time to provide their cattle with coarse fodder, although they still do not have enough concentrates.

An important part has been played in the development of animal husbandry by veterinary-zootechnical work. The rate of malignant anthrax among cattle has been reduced to nil. Precautionary measures in this

trapping season brigades of hunters are equipped with food and ammunition while actually in the field. Traveling agents from the Rural Consumers' Society take the hunters everything they need in the hunting grounds and collect the pelts from them on the spot.

Over the last 20 years a great deal of work has been done to supplement the animals hunted and trapped in the Yakut ASSR. Between 1930 and 1932, 118 specimens of the muskrat, a valuable animal, were brought into the Tokkinskiy Rayon of Yakutiya. It is now found in 32 rayons and has even become acclimatized beyond the Arctic Circle. Over the last few years muskrat shooting has been begun on a systematic basis.

Steps have been taken to replace the reserve of sable. At the present time more than 600 Barguzina sables have been let loose in the forests of Yakutiya. In many parts of the tundra the polar fox is supplied with additional fodder. In the summer, trappers and trapping industry experts carry out careful observation of the conifer harvest and the migration of fur-bearing animals so as to be able to give collective farms an indication of which particular type of hunting they should engage in. The farms make certain that their traps are closed for the summer to prevent needless loss of animals.

In Yakutiya there is also hunting for wild reindeer, elk, wildfowl and waterfowl as a source of food. Hunting is the most profitable commercial branch of the economy in the northern regions. From year to year the material standard of the collective-farm members is increasing, and the high income received from hunting and trapping enables the farmers of the North to supply themselves with food, factory-made clothing and footwear, and, in addition, to acquire commodities of everyday and personal use. Women hunters and trappers have begun appearing in Yakutiya, which is an innovation.

At the present time furs are not only obtained by trapping. Within the Yakut socialist economy, just as in the other regions of the Soviet North, a new branch of economy has sprung up—the breeding of fur-bearing animals in captivity (and, clearly, the most valuable ones). This experiment was begun in the Republic in 1936. Silver-fox farms were set up in Kitcha and Pokrovskoye. In 1956 there were 8 cooperative and 167 collective fur-farms specializing in silver fox in Yakutiya. Hundreds of pedigreed forest animals are kept on the cooperative farms.

The Yakut fish industry began to develop in the 1920's. The Tusbalyk ("salt fish" in the Yakut language) Trust was set up in 1928. During World War II the Yakutgosrybtrest (Yakut State Fish Trust) was set up, combining all the fisheries. Seines, 500–700 meters long, hauled by tractors, appeared at the fisheries. Around-the-year fishing was organized on the lower reaches of the Lena and Yana. A large quantity of fish is procured by the population for personal use. The northern fisheries supplement their equipment during the year by acquiring new seines and barrels and add new ships to their fleets. At the mass-scale fisheries the needs of the workers are provided for by cultural stations. The income of the collective fishermen is increasing. Although local methods of fishing (by boat, by barricading rivers, etc.) are still used, they are becoming more and more amateur methods and are being replaced by modern mechanized techniques.

Collective Farms

Typical examples of the Yakut collective farm are the enlarged Stalin collective farm in the Ordzhonikidzevskiy Rayon of the Kachikatskiy Nasleg

474 and the Stalin farm in the Megino-Kangalasskiy Rayon. The first of these
[621] barely numbered 10 households in the 30's when first organized, but now
unites 265 individual households. This collective farm has many different
[433] branches. It has 1200 hectares of ploughland, 3000 hectares of meadow-
land, 2700 hectares of pastureland, and upward of 3000 head of livestock.
The collective farm has seven subsidiary farms for dairy-farming, horse-
breeding, reindeer-breeding, poultry and pigs. Since 1953, fox and rabbit
[377] have been reared on it. The farm has two power stations. The electricity
[234] is used for purposes of illumination, threshing and cleaning the seed,
grinding grain and sawing wood. An electric milking system for the cows
is being introduced.

Well-designed houses, schools and hospitals have been constructed in
474 the collective-farm settlement. It has its own club, library and radio-
relay station. A park has been made near the settlement, and there is also
368 a stadium. Films are shown regularly and amateur concerts are often
organized.

474 The Stalin collective farm in the Megino-Kangalasskiy Rayon became
the largest collective farm in the Republic as soon as the neighboring
311 collectives merged with it. By government decree, it is the possessor of
433 67,000 hectares of land, of which 2798 hectares are ploughland, and almost
11,000 constitute meadowland and pastures. The remaining land is taken
up by forests. The collective farm sows almost 800 hectares of wheat, 720
hectares of spring and winter rye, more than 250 hectares of oats and
bareley, and 55 hectares of vegetables and potatoes. In 1955 there were
about 3500 head of cattle on the farm, more than 1200 horses, 250 rein-
deer, and more than 100 pigs; furthermore, the collective farm has a sub-
sidiary poultry farm and a section for breeding fur-bearing animals.

474 At the present time the collective farm has three small power stations
[37] with a total output of 125 kilowatts. The electricity is used for threshing
[246] grain, driving a sawmill and operating lathes. In view of the increased
generation of electricity the farm has mechanized the delivery of fodder
to the byres. There are more than 500 different types of machines, 6 trucks,
2 passenger cars and 12 engines on the farm.

[434] In 1955, the farm's income was 2,700,000 rubles. The material status
of the farmers has been considerably improved.

At the same time their cultural standards have increased.

[212] There is not one single illiterate person on the farm: 120 farmers have
[871] a secondary education or higher, 10 of them are studying at universities
and 165 in tekhnikums and secondary schools. Many of the collective-farm
members return to their own farms after receiving their education.

[233] Great progress has been attained by the northern farms of the Nizhne-
Kolymskiy, Bulunskiy, Olenekskiy, Anabarskiy and other rayons. Their
[224] achievements are due to the overall reorganization of reindeer-breeding
[563] and the trapping industry. On many of the farms there are Yakuts, Evenks,
Chukchi and other minorities all working together.

Socialization of the reindeer and the creation of large herds has made it
474 possible to introduce such veterinary measures as stage-by-stage nomad-
232 izing based on the rotation of pastureland, inoculations, and day and night
233 guarding of the herds. In the past Yakutiyan reindeer-herders never made
use of dogs, which, for example, among the Nentsy make the work of the
herdsmen easier. Nowadays reindeer-herding dogs are used extensively
in the Nizhne-Kolymskiy, Allaikhovskiy and Bulunskiy Rayons.

474 The northern collective farms have not confined themselves to the tradi-
433 tional branches of economy, namely, reindeer-breeding, hunting and fishing,
233 and are courageously developing new branches. On most of the

53:Tokarev and Gurvich E-4 (no date) 1964
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reindeer-breeding collective farms there are now dairy and horse-breeding sections.

The Stalin Even-Yakut collective farm in the Nizhne-Kolymskiy Rayon (formerly known as the Sutanya-Udëran) is successfully developing reindeer-breeding alongside horse-breeding, fishing and hunting. The collective contains more than 17,000 reindeer. In 1955 more than 850 tsentners of such important species of fish as whitefish and baranatka were caught. In 1955, 215,000 rubles worth of furs were delivered to the State. The gross monetary income of this collective farm was 2,430,000 rubles; 1,423,000 rubles were distributed to the collective-farm members for labor units, and for each labor unit the payment was 17 rubles cash, 1.04 kg of meat and 720 g of fish. The monetary income per household averaged 24,000 rubles.

Despite the fact that the chief branches of industry of the northern farms have required periodic migration on the part of the population, all the farms have constructed settlements or collective-farm centers. As an example we can take the settlement of Kolymskaya, the center of the Turvaurgin collective farm. This center contains the headquarters of the farm administration, an incomplete secondary school with boarding facilities, a hospital, a shop, a house of culture with a library, a trading station, a power station, bathhouses, a dairy-farm, and 50 standard farmhouses. The farm recently acquired an S30 tractor, a launch and two motorboats. In ethnic composition the Turvaurgin collective farm is multinational and consists of Chukchi, Yukagirs, Yakuts and Evenks.

New Way of Life

A considerable obstacle in the way of the implementation of cultural and public-health program in Yakutiya between 1920 and 1930 was the scattered nature of Yakut settlements due to the ancient occupation of pastoralism. One, two or three yurts together was the predominant type of "settlement." The combining of them into larger units was further required by the everyday farming needs of collective farms.

The construction of settlements under Yakutiyan conditions was a major achievement in socialist reconstruction of the Yakutiyan countryside. It provided an opportunity for installing radio and telephone on the farms and providing them with medical and cultural-educational institutions. In 1960 the construction of settlements in southern Yakutiya was by and large complete. The farm settlements are usually located on elevated riverbanks or by the shores of lakes and consist of several parallel streets. Generally speaking, timber houses rather than yurts are built in these settlements. The center is reserved for the school, collective-farm administrative offices, medical center and club. On many farms yurts are used as work premises. There are quite a few settlements with power stations. In the Megino-Kangalasskiy Rayon alone there are 14 farm power stations with a total output of more than 510 kilowatts. Radio-relay systems have been installed in many of the new settlements. The farmers live in the settlements when they are not out working.

Although several types of farmhouses have been developed, they are still far from perfect. The rigorous climate makes particular demands upon the housing construction in Yakutiya. Special forms of heating are used in the new houses, such as triple frames—the first frame is a single one, while the second is inserted during the winter and has two panes of

[184] REINDEER BREEDING AMONG THE DOLGAN
1.

233 The domestic reindeer (Cervus tarantus), which plays a prominent role in the life of the Dolgan, is found in three types according to them: the Tavgi--saamajdii, the Tungus--tonustii, and the Dolgan--t'ataag' taba.

The Tavgi reindeer is distinguished by its small size, being from 110 to 120 centimeters in height; it is weak and unsuitable for riding, but on the other hand it is distinguished by its great endurance, is accustomed to the open tundra, bears easily the severe cold of winter, and does not run away into a blizzard; quick to become emaciated, it is also quick to put on weight even with the scantiest fodder. It has a fleshy head, a short neck and legs, and a broad back. The Tungus or forest reindeer is big and strong, often attaining the height of 127 centimeters, and has thick horns. In its powers of endurance it may well be in last place, after the Tavgi and Dolgan reindeer. The Tungus reindeer is usually sheltered in the taiga from snowstorms, and is quite unaccustomed to the severe cold of the tundra and does not stand it well. Notwithstanding its strength, it requires frequent rest periods when it is traveling. The Dolgan reindeer also is strongly attracted by the forests, but living on the border between the forest and the tundra it has more endurance than the Tungus reindeer; it attains a height of 118 centimeters, and it has an almost completely level back and thin, sharp horns. The Dolgan reindeer is weaker than the Tungus, but stronger than the Tavgi reindeer. Both the Tungus and the Dolgan reindeer are quick to grow emaciated and are not so quick to put on weight even when there is an abundance of fodder. The best breed of reindeer is considered to be that obtained by crossing the Dolgan and the Tavgi; this kind is quite large and strong, and is also distinguished by its endurance. From what has been said we can see that the farther north we find the reindeer, the weaker and smaller it is, but it also has greater endurance since it is used to harsh climatic conditions.

In summer the Dolgan reindeer feed exclusively on grass and the leaves of the dwarf alder, and they especially love the young sprouts of grass and mushrooms; besides this, in summer they do not mind feasting on mice upon occasion, and they also break the shells of birds' eggs and drink the contents. In winter the basic food of the reindeer is Iceland moss, a type of lichen. But, besides this, in winter the reindeer devours everything that turns up: clothing, meat and fish; the reindeer feels an especially great need for salt, for the

233 satisfaction of which it runs after people, expecting their help.

Recently there have begun to appear among the Dolgan the "aaku"-reindeer, a type which is fed exclusively on grain in the form of flour, dried bread crumbs, small ring-shaped crackers, and cookies. They become quite tame and are outstanding for their great strength and endurance.

233 476 In summer the herds of several owners unite to form one big herd which is often quite large in size. In the first place, such large herds formed from smaller ones result in economizing of the working forces, since a considerably smaller number of people is required to look after these large herds [185] [Figure 1] than is needed for the separate smaller herds which united to form the larger one; in the second place, when dark clouds, gnats, and gadflies pass over the tundra, the large herd does not disperse like the small herds do; the reindeer bunch up and keep revolving constantly, since each one of the circling group tries to squeeze into the center in order to protect his sides from the bites of the gnats. When they drive the reindeer to the camp, the latter do this "circle dance" of theirs around the chooms, which threatens to knock them down. In the case of animals with such habits very few persons are required to pasture a large herd, since the only work they have to do amounts to driving the strays back into the herd.

Another advantage of having the large herds in summer is the fact that there is a sufficiently large number of workers for the times when it is necessary to guard the herd day and night--at the time when the grass grows in spring, and during the mushroom period in the summer; the sufficiently large number of people makes it possible for them to take regular shifts at the pasture, which almost never has the effect of withdrawing the working forces in the economy.

233 When evening comes on, the herd is driven to the camp by the day herders and is taken over (if the herd is not too large) by the night herders. When the satiated reindeer lie down the night herders--in the winter on sleds, in the summer riding on reindeer--make their rounds several times with a dog. If the pasturing takes place in the fall, when it is too dark, they build a fire. If the herd becomes frightened upon scenting a wolf, the herders shout and make a lot of noise in order to drive the animal away. In the case of a very large herd the wolf sometimes does not flee from the noise but hides behind the reindeer and continues to harass them.

In order to protect the reindeer from gnats the natives build "smoke fires" with moss--saamniit--and in order to prevent the

233 reindeer from burning themselves they erect several poles--buota--in the shape of a cone over the smoke fire. Another, more effective measure against the vermin is that of making a nomadic trip to the north or to the high hilltops, where it is colder than in the low places of the tundra. But in their wanderings over the rocky hilltops the reindeer wear down their hoofs, which therefore often become affected with hoof cancer and require careful attention.

In winter the herd is driven some distance away from the camp to a moss pasture, and if this is situated at a quite considerable distance, several "aaku" or other more domesticated reindeer are left at the chooms so that in case of necessity it will be possible to use them both for driving home the herd and for short excursions from the camp. In a severe blizzard the reindeer behave in exactly the same way as when they are beset by gnats in the summertime: they gather together into a bunch and each of them tries his best to force his way into the center of the herd. This continues until the cold begins to chill the reindeer; well-fed reindeer will hold out in such a blizzard for a period of three days, after which they disperse in various directions against the wind, so that their fur is not blown against its direction of growth. In cases like this the Tavgi reindeer have a great advantage since, being used to the open tundra, they easily endure the blizzard and do not run away.

231 Great help is afforded to the herders by the Tavgi reindeer dogs.
233 Small, short-legged, and for the most part all white, they remind one of polar foxes [Figure 1]. When it is necessary to drive the herd home one has only to point with his [186] hand, whistle, and cry out: "Truu, truu, sar syar!"--and the dog will be off like a shot and round up all the reindeer in a trice. Usually when there is a large number of reindeer two dogs are released and they drive the herd home by running about on two opposite sides of it. Knowing this "nasty" habit of the dogs, the reindeer cannot bear them; they submit to the dogs while in the herd, but if a lone deer encounters a dog he will attack him with his horns. Some dogs bite calves to death in the excitement of driving the reindeer home. In order that the dogs may not harass the reindeer unnecessarily during the nomadic wanderings they are tied to sleds in winter, and in summer they are hobbled by having one of their forelegs tied up. In order that their forelegs may not grow numb, they have their right and left legs tied alternately. The reindeer dogs are usually bought from the Tavgi and are quite expensive, good ones being exchanged for as much as two reindeer, where the value of one

231 reindeer is twenty-five to thirty rubles.

233 The runaway reindeer give a lot of trouble. In order to hold them back a ring made out of rose willow is put around their neck, and
233 on this is hung a small wooden block in the shape of a fork, or a long stick left thick at one end so as to support the crosspiece through which it is thrust [Figure 2b]. Sometimes these types of blocks are hastily replaced in case of necessity by a stick fastened at its mid point to the neck of the reindeer [Figure 2c]. The small block strikes the reindeer painfully on the knees, thus preventing him from running. But there are still more wild domestic reindeer--tehii taba, or s'r'' taba--which are always trying to get away from the herd by some means; as if that were not enough, they lure the others away by their bad example. Such reindeer have a small block--the mene [Figure 2d]--put on their foreleg, and a cord is tied tightly around their back leg above the joint [Figure 2, upper right], so that when they run off to one side they are forced to follow the herd on three legs. In order not to lose the runaway reindeer the natives make bells out of tin and fasten them to the necks of the runaways; the bells are called kyoyleen [Figure 2a]. In cases where the runaways are mares they leave the calves with them, and to restrain the mares the calves are tied to trees, if there is a forest. In order that the calf may not get himself all tangled up, the natives strip enough bark off the tree around which the rope is tied so that the loop will slide freely. However, they do this only in the autumn, when the gnats have disappeared.

2.

In spite of the fact that the reindeer is widely used as a beast of burden, it has still not become completely domesticated. Each year the domestic reindeer break away from the herd in dozens and increase the number of wild reindeer. They run away during a blizzard, or in the summer while searching for mushrooms, and never return. The mass raids of the wild reindeer--the "aalin"--are a serious threat to the Dolgan economy. In spite of such a negative feature the domestic reindeer are a real boon for the inhabitants of the northern regions; it is only thanks to them that hunting is possible, to say nothing of the fact that both the food and the clothing of the natives is obtained from the reindeer.

How true is the observation of A. F. Middendorf that for human beings the chief quality of the reindeer is its submissiveness, which makes it an obedient implement in the hands of a man both to a much greater degree than the horse, and with much less exertion on

233 the part of the human being! But the domestic reindeer is also terribly importunate. No matter how many times you drive a reindeer away from your sled--even injuring him in the process--you have only to turn around and back he comes again to start eating your traveling clothing, the straps, the separate parts which fasten the sled together, and so forth. The good qualities of the reindeer as a beast of burden are his endurance and his ability to find quickly the right direction even in the most severe blizzard, when it is impossible to distinguish anything at a distance of two or three paces.

233 492 In winter a reindeer harnessed to a light sled runs along at the rate of twenty-five to thirty kilometers an hour; when harnessed to a freight sled it does seven or eight kilometers an hour. In summer the riding reindeer in the same time will cover only three or four kilometers, but such slowness is compensated for by another valuable [187] [Figure 2] [188] quality of the reindeer--the ability, thanks to its broad hoofs, to traverse any kind of a swamp without getting stuck, and in winter it can do the same over deep snow drifts. These hoofs support the reindeer on the steep slopes of mountains, and allow him to stand with his feet on such small and shifting mounds as would scarcely allow any other kind of animal to support himself. The reindeer is also irreplaceable in crossing the turbulent mountain streams: he swims excellently and is able to withstand the strong onslaught of the waves in rapids and waterfalls. The author remembers crossings of the rocky and turbulent streams of the Noril'sk Mountains, the noisy waves of which, striking with great force, threatened to smash reindeer or man against the rocks if either fell. It was necessary to make great efforts not to fall, by leaning with a staff on the slippery stone stream bed. It seemed that at any moment the reindeer would wallow on his side, that his head was spinning from the rapid motion, but nevertheless he stepped along on the wet and slippery stones, kept his balance on them by some miracle, and emerged safe and sound on the opposite bank of the stream.

For riding the natives use for the most part castrated bucks, but they also use mares. They remove the necessary number of thoroughbred bucks from the herd and use them to sire offspring; all the bucks are castrated. The best time for this is considered to be early spring before the appearance of the gnats, or autumn before the snow falls. The operation is performed for the most part on two-year-olds; the natives avoid castrating bucks older than six years, for they

233 say that they die from it. The castration is performed in the following
492 way: the natives "throw" the reindeer, two of them hold the reindeer by the legs, and one kneels down and chews the buck's testicles until they are destroyed.

[283] For catching the reindeer the natives use the "maam' t"--a rope which may be as long as 160 meters and which is plaited out for four or five thin straps. On one end of the maam' t there is a cross-piece made of a little stick--the karaka, or 'knot'--which is passed through both openings in a bone plate--the "pietelke." Before catching a reindeer with the maam' t the natives wind it around their left elbow, holding part of the rope--the part which does not have the loop formed by means of the "pietelke"--in their left hand; they take the other part of the rope in their right hand and, swinging it around, they throw it at the head of the reindeer they have chosen. The noose with the bone plate falls over the horns and tightens. Sometimes two men throw the maam' t at one reindeer at the same time from opposite sides of him. This method of catching the reindeer is called mökkytterer (to compel to fight). Often in winter and in summer at the time of the gnats, when the reindeer cluster together in a bunch, several men circle the herd with outstretched maam' t and act as a fence, which allows the other persons to go into the midst of the herd and catch reindeer with their bare hands. This method of catching reindeer is called eritterer (to compel to go around).

The Dolgan attain amazing skill in throwing the maam' t; they start practicing it when they are very young, throwing the maam' t over the horns of slain reindeer.

233 Once the animals have been caught the natives want to lead them
284 to the place where they are to be harnessed or have a load put on them, and in order to do this they "string" the reindeer--five or six, and even more, at a time on one maam' t, tying them by means of dull knots called ile baaj" (simple binding) or iliinnen sieter baaj" (ribbon for leading by the bridle) [Figure 2g]. These knots have the drawback that they can tighten up and choke the reindeer, and for this reason they are only used for leading the reindeer over short distances. In order to lead reindeer by the same method over longer distances special knots that do not tighten up are used; they are called tuomtuu tarder (the binding which is quickly undone) [Figure 2f].

In addition, they use still other knots for tying one reindeer: a) er kihi baaj"ta (the male binding) and b) çaktar baaj"ta (the female

233 binding) [Figure 2h-i]. A man never uses a female knot to tie a
284 reindeer, for he would be laughed at if he did. They tie the rein-
[412] deer to trees or bushes; in those places where there are no trees or bushes--for example, on the hilltops--the reindeer are tied to special wooden pegs--the kojnos--about forty or fifty centimeters in length, which are stuck into the ground and which at the same time serve as digging sticks for unearthing edible roots [Fig. 2e].

233 In summer the Dolgan ride reindeer, and only their "twigs"
492 (boats) are carried on special sledges with two crossbars; in winter, however, they ride on sleds exclusively. [189] According to the stories, in ancient times they rode only reindeer both summer and winter and borrowed the sledge gear later from the Tavgi.

The reindeer harness is in reality not as simple as it would appear at first glance; and incidentally, in all the Russian ethnographic literature we do not have anything like a complete description of it. If someone who knew nothing of the ways of harnessing reindeer were to take it into his head to hitch one up [Fig. 3] according to the descriptions found in the available literature, he would find out that he was quite helpless. Any ethnographic description can be completely scientific only if by following it one could completely and precisely duplicate the described event or object, and it is our task to strive toward this end with all possible efforts. To give a detailed description of the Dolgan winter reindeer harness means to give a description of the harness which is the most widespread at the present time in the north, starting from Scandinavia and extending to the eastern tip of Asia, excluding the Paleo-Asiatics. Such insignificant variations among the separate peoples who live in the aforementioned territory as, for example, the fact that the Nenets and the Tavgi steer from the left side while the Dolgan steer from the right side, and other minor details, do not change the general construction of the summer and winter harnesses of the reindeer.

The bast' ŋa--the halter used for riding a reindeer [Fig. 2k] consists of a strap sewn together in the form of a circle and placed on the forehead; fastened to its sides are two small straps made of reindeer hide [Fig. 2e-m] by means of which the halter is fastened at the back of the head; to the lower part is sewn a strap called njuogu--a small rein for guiding the reindeer [Fig. 2n]. The halters
[531] of female reindeer, the reindeer used as pack animals, and the "shaytan'i" riding reindeer (1) have the part over the forehead

1. "Shaytan'i" riding reindeer are reindeer on which are

[531] carried the holy objects of the household--the "shaytany."
233
492 trimmed with green or red cloth and are decorated with glass beads [Fig. 2o]. In order that the reindeer which is being led by the rein attached to the first reindeer may not pull back, the natives put on him a halter with a bone comb known as the keebee [Fig. 2p-r]. When the reindeer begins to slow down the teeth of the comb dig into the back of his head causing enough pain to make him run faster.

Saddles are of two types: the first--the male type--is the ʂykeeʒdii [Fig. 3A], and the second--the female or pack type-- is the 'ŋ"r [Fig. 3B]. The male saddle consists of two long boards fixed parallel to each other by means of [190] two curved branch pieces of horn or branches of a tree which have been sawed off to the proper length and then nailed to the ends of the boards. The boards are sewn round with leather which is stuffed with reindeer fur, forming a s'tt 'k--two cushions for sitting on. On the female saddles, or packsaddles, in place of the horns which do not stick up above the cushions there are high semicircular pommels on the front and back ends called soroon. [Figure 4]

[531] The frame of the female saddle, or packsaddle is more massive in construction, the cushions are thicker and broader, and the lower part of the front pommel is trimmed with red or green cloth and is decorated with glass beads [Fig. 3r]. The front pommel is completely covered with red ocher, the rear pommel is left white and is only decorated with ocher. On packsaddles, besides this, the rear pommel is richly decorated with tin incrustations [Fig. 3h]. All forms of the saddles have a crack running down the whole length of the middle which fits precisely over the shoulder blades and vertebrae of the reindeer. The saddle is not placed over the center of the reindeer's spine, but rather on the shoulder blades, since the spinal column of the Dolgan reindeer is not strong enough to bear the weight and breaks under the strain.

A female or pack reindeer is saddled up in the following manner [Fig. 4]: first the saddle is mounted on the reindeer, and then a small rug made of reindeer heads--the dah'na--is put on so that the bags will not rub sores on the sides of the reindeer, and then two bags sewed together from hide obtained from reindeer legs and tied together are thrown across the saddle. All this is made secure with a leather saddle girth called timeektiin [Fig. 2r] which is three or four fingers in breadth and has an iron ring on one end. Bags are never thrown across a male saddle: [Fig. 5] the saddle is simply

233 placed on the shoulder blades of the reindeer in the same way as
492 has just been described, and without any covering on it is tightened to the reindeer's back by means of the timeektiin [Fig. 5].

The natives mount the reindeer from the right side. In mounting they hold the rein in the left hand, leaning with this hand on the front pommel of the saddle; with the other hand they lean on a staff, which is replaced by a spear when they are going hunting, and then they throw the left leg across the saddle. The reindeer staffs are of two types--the male tajak, which has the shape of a simple stick long enough to be comfortably leaned on while the rider is sitting on the reindeer [Fig. 6a]; and the female staff, called njuorii, which has an iron top with a crook at the end of it [Fig. 6b]. Women sitting on reindeer lean on the staffs, grasping them with their hands below the tops, and with the crooks thrust under the edges of their sleeves [Fig. 6]. The staffs of old and poor women do not have iron tops, but simply have a wooden crosspiece on the top [Fig. 6c]. Riding on the back of a reindeer [Fig. 7] calls for great skill, especially on the male saddle, which has no pommels. If one who is not in the habit rides this way his legs become dropsical, since they hang free without any stirrups. In order not to fall off while he is riding, the rider must constantly lean on his staff with his right hand. When the rider wishes to turn the reindeer to the left he presses his right leg against the cheek of the reindeer; if he wishes to turn to the right he pulls [191] [Figures 6 and 7] on the rein. A load of not more than fifty kilograms is put on a riding reindeer without a rider.

The bast ŋa--the halter of the winter harness of the front (lead) reindeer [Fig. 8A]--has on the part which goes over the forehead instead of a strap two plates made from horns which have been sawed up in the middle. One of these--the long bent one (on the left)--is called the s'ŋaak muoha (cheekbone) [Fig. 8b]; the straight short one (on the right) is called the njuogu muoha (the bone of the halter) [Fig. 8c]. There are openings located in the extreme ends of each plate, and through each plate is passed a thong [Fig. 8e]; these thongs are tied behind the back of the head of the reindeer in order to hold the halter securely. On the right (guiding) side of the halter is fastened a long rein--the njuogu [Fig. 8d]--which is used to guide the reindeer and which is sometimes braided together out of five or eight thin straps. When the rider pulls on the rein, the horn plates on the reindeer's forehead press on the arch of its brow and force it to turn to the right. The halters of the outrunner reindeer [Fig. 8B] are different from the

233 halter of the lead reindeer; the former have two cheekbone plates
492 made of mammoth bone--s'aak muoha [Fig. 8g]--and are often richly decorated with carving; each of the plates has an opening in each end. Through the two openings at the top is passed the strap which runs across the forehead; through each of the two openings at the rear is passed a thong, one of which ends in a noose, the other in a copper button or a wooden buckle; these two thongs are fastened together behind the head of the reindeer. A strap called the kostuur b'a, which is connected to the bellyband of the right reindeer of the team, is fastened below the halter or to the opening located in the center of the cheekbone plate. A strap called the ala or laamp' is a long strip of hide, or of morocco leather which has been purchased, ten to fifteen centimeters wide; this is put on the reindeer obliquely, passing over one shoulder, the chest, and one leg. To one side of the strap is fastened a thong--the ahaan b'a [Fig. 9g]--by means of which the strap is held against the neck of the reindeer and does not slip down. The ends of the strap are connected by means of [192] [Fig. 8] a thong to the ends of the girth, called the kur, which is thirty to thirty-five centimeters in width and which encompasses the front part of the body of the reindeer like a ring [Fig. 9j]. A leather loop is fastened on the inside of each side--right and left--of the girth at a point approximately one-quarter of the way around, starting from the ends. To one of these is fastened an iron or a copper ring--tierbes [Fig. 9w]--about eight centimeters in diameter, which has on one side a thong with a wooden buckle on its end. This thong is passed through the openings in the ends of the ala strap and is buckled to the other loop on the inside of the girth. Behind the iron ring is fastened an iron hook called kiraaptik, through which is passed the rein [Fig. 9z and cc]. These hooks have two forms; they are either shaped like a Russian capital "L" [that is, "Л".--Translator.] with curled ends, or like a Latin "S," and they are often made of twisted iron. The first type of hook is considered to be the more practical, since it eliminates the possibility that the rein (the traces) might become unfastened and fall to the ground. Both of the aforementioned types of hooks are nowadays gladly replaced by bought iron buckles together with dog chains [Fig. 9bb].

In the last ten to fifteen years the so-called Yurak harness--çuraakt" kolyyr--has begun to be used among the Dolgan with great success. In this type of harness the iron ring is absent; the thong, which runs from one side of the girth, is passed through the opening in the opposite side of the ala strap and is buckled to the other side

233 of the ala strap on the inside. However, the rein from the sled is
492 connected directly by means of a wooden buckle to the ends of the ala strap [Fig. 9ff]. The great success of this type of harness is due to the fact that the iron ring does not rub a hole in the reindeer's hide.

A hook called gugaarka is fastened to the girth of the lead reindeer on the right side, and over this is thrown the rein in order that it may not drag along the ground [Fig. 9As]; this gugaarka may be of bone [Fig. 9s] or of iron, encrusted with either silver or copper, and hung with rings [Fig. 9t], and it is an ornament among the youth of the area [Facing 192: Figure 9 on an unpaginated unfolding insert] [193] valued at one reindeer (twenty-five to thirty rubles). The bone gugaarka are preferred by hunters, since the metal ones frighten the wild reindeer with their jingling. On the left side of the girth is fastened either a wooden or a bone plate, through the two openings of which is passed a loop made out of rope, which is connected by means of the ahaan b'a thong with the halter of another reindeer of the team. The rein--called pobotuok--is a long strap made of hide, about two centimeters in width, and terminating either in a loop--which is slipped over the kiraapiik hook to hold the rein in place, or onto the iron buckle of the ring--or in a small wooden stick, which is passed through the ends of the ala strap. The rein is of two types: the main rein--the tojon poboduok [Fig. 9k]--and the outrunner rein [Fig. 9L]. There is usually only one main rein on any team; this is terminated on both ends by loops or wooden buckles, and it connects the outermost reindeer on one side of the team with the outermost reindeer on the other side of the team; the outrunner rein is half as long and it connects the center outrunner reindeer [Fig. 10] to the sled; one outrunner rein is necessary for each out-
233 runner reindeer. The reins pass between the hind legs of the rein-
401 deer and run through the whole system of pulleys tied to the front of
492 the sled, which are fastened on at various points, depending on the position of the reindeer in the team. On every sled there are two side pulleys situated always in the same place; these are fastened to the front ends of the runners in the following way: a strap is passed down through a special opening in the end of the left runner; the short end of this strap is passed through a second (smaller) opening in the pulley; then through this same opening the strap is passed upward again and the end of it is tied in a knot. The long part of the strap is thrown across to the end of the right runner, where there is the same kind of opening, and a pulley is tied on in exactly the same

233 way as on the left runner, the only difference being that the end of
401 the rope is tied to the end of the side board, or the lath called
492 bajka--in the local Russian pronunciation "bayki" [Fig. 9r]. This strap is tied to the crossbeam of the sled in the middle, between the ends of the runners. Only the main rein is passed through the pulleys on the outward sides of the sled. Pulleys for the simple reins of the reindeer between the two outer reindeer of the team are located between the two pulleys on the extreme outboard sides of the sled in all possible combinations, depending on the position and function of the reindeer which are fastened to the sled. Where the team consists of only two reindeer, only the two outboard pulleys and one main rein are used; where there are three reindeer in the team, three pulleys are used; where there are four reindeer in the team, five pulleys are used; where there are five reindeer, seven pulleys are used; six reindeer require nine pulleys; and eight reindeer require seven pulleys [Fig. 3L, 2, 3, 4, and 5]. The last type of team is very rarely used; for the most part it is used in the summer when a boat is being transported during a nomadic trip. In this team arrangement only the main reins alone are used: one main rein is run from each of the four reindeer which make up the second rank, and the ends of these reins connect the reindeer in pairs [Fig. 9d--k].

The pulleys called toŋooldo or celaak are made from reindeer horn or from wood, and are of two types: the cargo pulleys [Fig. $9m_1$], which are the more massive, and the pulleys for light riding [Fig. $9m_2$], which are [194] thinner. They are usually different in their forms, varying from an irregular rectangle to a diamond in shape. The cargo pulleys and the outboard pulleys each have two large openings: one of these is wide, and it is for the main rein; the narrow opening is for the rope which fastens them to the ends of the runners. Both of the openings are made large on the middle pulleys, since the simple rein is tied to the upper opening and the main rein passes through the lower opening. An interesting type of pulley is that with five narrow openings; it is made that way so that in case the pulley breaks off at the first opening the rein can be passed through the second opening; in case the pulley breaks off at the second opening the rein can be passed through the third opening, and so forth. This saves the natives from having to make a new pulley while on a trip--a job which is not especially pleasant in cold weather [Fig. $9m_4$]. If one has only pulleys with one large opening and he has to harness up more than two reindeer he ties the pulleys

233 together in pairs and thus obtains the equivalent of one pulley with
401 two large openings [Fig. 9m].

492 This method of harnessing the reindeer is quite convenient thanks to the system of pulleys: each of the reindeer pulls an equal share of the load, and a contributing factor here is the fact that going from right to left the reins of the reindeer get progressively shorter
[531] [Fig. 9A]. The ala strap and the girth of the dressharness are covered with red or green cloth and decorated with varicolored glass beads, or else the parts made of reindeer hide are decorated with designs sewn with thread made from reindeer tendons. The cargo harness is much simpler: it consists only of an ala strap, which is canvas for the most part (made from sacks), and there is no girth at all. Usually there is no halter either; the reindeer are tied by their necks to the back of the front sled. There are either two or four reindeer in a cargo team and when there are four each pair of them has only one neck-rope [Figs. 8C and 9N]. We think it is helpful to reproduce a special drawing [Fig. 10] in order to introduce a simplified description of the terms used by the local Russian speakers for the parts of the sled.

493 Reindeer sleds among the Dolgan can be separated into five types: 1) Bytej s'rga, or olok s'rga--the "covered" or light sled [Fig. 11]; 2) 'raak'--"iraka" in the local Russian pronunciation [Fig. 12]; 3) setii s'rga--the cargo sled, or the sled "which is lead" [Fig. 13]; 4) tard'' or turku--the cargo sled [Fig. 14]; and 5) turkucaaŋk', or little turku [Fig. 16].

[783] The "covered" sled is used exclusively for light riding; in the Noril'sk Rayon only the women ride on them--the men consider this a profanation for themselves, since after a trip on a female sled it would be necessary for them to cross over the path of the shaytany--the household spirits--or of a wild animal, which is considered to be unclean. In other regions this rule is not observed: there men too ride on "covered" sleds. The "covered" sled is distinguished by high legs forty-five to fifty centimeters long, of which there are five, eight, twelve, or fourteen on one sled. These legs are slanted toward the back of the sled, and they are mounted in such a way that they are farther apart from each other at the bottom than they are at the top [Fig. 10]. This is done so that the considerable height of the body of the sled will not make the whole sled unstable and allow it to turn over. Such a construction is also convenient in that it allows a person sitting in the sled to stand with his feet on the runners, which stick out beyond the line of the so-called "bayka," in

284 493 Although in the first three types of sleds the predominant means of holding the parts together is wooden nails, which have the advantage of not becoming fragile, as do iron nails in the intense cold, in the last two types all the separate parts are held together by means of straps.

233 492 493 To the front part of the setii s'rga, the turku, and the turkucaaŋk' is fastened a thick shaft-bow made of rose willow--the kab'rga, or "ram" ["male sheep"--Translator]. However, just as among the northern Yakut, among the Dolgan this does not serve as something to tie the rein to; the rein is passed through pulleys which are fastened directly to the crosspiece of the sled, and the rein passes [197] under the ram. This was explained as being due to the fact that if the reins are allowed to pass over the top of the ram they are high enough up in the air to rub sores on the legs of the reindeer, whereas the ram keeps the reins down low all the time; but such an explaination is not convincing to me personally. Thus, we see that the ram, having lost its main function as the shaft-bow by which the sled was pulled, among the Dolgan serves only as a "bumper" to prevent the sleds from breaking when they collide with trees. [Fig. 14] In the cargo harness, the rein is sometimes passed both above and below the ram, so that in case the pulley breaks the sled will not have to stop, since the reindeer can pull it by the ram.

233 284 492 A characteristic peculiarity of the winter harness for reindeer is the absence of knots, which are replaced by wooden buckles; these are quite convenient in severe cold, when the fingers become frostbitten after being exposed for a moment, and for this reason it is important that the shortest possible time be spent in harnessing up the team. If it should be necessary to tie knots in the reins, for example, the natives make knots which can be quickly untied [Fig. 9L]. [Fig. 15].

233 492 When the natives are riding in winter they urge the reindeer on with a stick about four meters long; they poke the end of the stick into the hind quarters of the reindeer, since, on account of its thick hair, the reindeer is completely insensitive to other methods of prodding. This stick--the kyrej, or "khorey" in Russian [Fig. 9b]--has on its top end a small bone circle to prevent the reindeer being pierced by the stick. On the lower end of the "khorey" is fixed an iron tip of a spear--the ynyy--with a blunt point [Fig. 9ee]. With this the front rider tests the thickness of the ice on rivers in the autumn to see whether the caravan can cross over them or not. This tip also enables the natives to poke the stick upright in the snow when

233 they halt during the journey.

492 When the natives want to stop the reindeer, they pull on the rein, turn them back toward the sled, and tie the lead reindeer to the top of one of the legs or to the bayka. The natives do not sit [198] on the sled right away when they start up: they first get the reindeer in motion and run alongside him for a while holding on to the rein. Then while the sled is moving they quickly jump onto the runner with their feet and sit down on the sled. They do it this way so that it will be easier for the reindeer to start the sled moving. If it is necessary to turn the reindeer to the right they pull on the rein; if they want to turn the team to the left they strike lightly with their khorey on the right side of the lead reindeer. The reindeer learn very quickly to follow directions when being ridden; they begin to be trained at the age of three years. A reindeer which has not been trained for riding is tied securely to a tree and a rider sits astride him. After fooling around a little the reindeer calms down, and after a few days becomes completely obedient. The natives train them to pull in a harness by hitching up an untrained reindeer with trained ones. Nevertheless, there is always some skill required to train reindeer: otherwise the reindeer turns out to be bad and capricious. When a riding reindeer gets stubborn, he stands quietly waiting while the rider climbs into the saddle, and then he folds his front legs under him and bends his head down; when this happens the man flies off head first.

[526] The Dolgan attain great skill and agility at riding. For amusement they sit astride the reindeer facing backwards and drive the reindeer at top speed without using a staff to support themselves. Another trick is to drive a light sled at frightful speed down a wooded slope from the top of a mountain in winter without smashing up the sled. The maximum useful life of a reindeer which is harnessed up only in the winter or only in the summer is twelve to fifteen years; if he is harnessed both summer and winter the limit is five to six years, since the latter quickly gets infected or inflamed feet. In the big herds of rich people many reindeer are not harnessed at all; it is said that these reindeer may live to the age of thirty years.

The reindeer grow fat only in the summer and are "plump" until the polar sunrise, after which they begin to grow thin; the reindeer are fast runners in winter, but as early as April or May-- or sometimes even by the end of March--they begin to get tired, run slowly in harness, and often swing off the road and stop. If a reindeer lives until the end of May the natives assume that he will not die of

233 starvation. In June the reindeer has already become noticeably
492 fatter. In autumn and winter the natives harness mostly female reindeer; in the spring they ride exclusively on bucks, protecting the cows which are with calf. The natives said that not so long ago they made a practice of not harnessing the mares to the sleds beginning about ten days after the mare had copulated with a buck, in order to avoid miscarriages.

If a reindeer collapses from hunger while being ridden, in order to force him to go on the natives knead him in the stomach with their fists, and if this is of no avail, they cut off one of his ears.

3.

233 The reindeer, which is an object of private property, is marked
422 by each owner with a particular sign called the belie. The most reliable markings are considered to be figures made by making cuts in the ears of the animal, without making any distinction between the right and left ear; these ear cuts have different appellations depending on their form [Fig. 17]. Independently of the markings on the ears, the natives cut signs with a knife in the form of different combinations of lines in the hair on the sides of the reindeer [Fig. 18]. They do this in the month of the spring sunrise, after the polar night--the time of severe cold--has passed, in order that the reindeer may not get frostbitten in the places where the hair has been cut off. The signs of ownership are the same both for bucks and for mares. Cult signs, as among the Tavgi, are not found among the
233 Dolgan. When the children of a family grow up and are given part
428 of the reindeer herd for their own, the old markings are left on the grown reindeer, and the new markings are put only on the offspring. The youngest son, who is the last in line to receive the family
[583] wealth, receives his father's markings by inheritance. The markings
233 of the husband are put on reindeer which are received as part of a
422 dowry. When an owner buys another reindeer he cuts his own markings into its ears, and one may often see reindeer with several markings in their ears. It must be added that when an owner has a large herd not all the reindeer are marked with the signs of ownership. The Dolgan have an amazing ability [Facing 198: Figure 16 on an unpaginated insert] [199] to recognize their own reindeer even after several years have passed, and even when the reindeer were only calves when last seen. Rich reindeer breeders often have more reindeer in their herds than they can count, but if they see one of their own reindeer in someone else's herd they recognize it at once, even if it has no markings; at the same time they are unable to say which

233 reindeer are missing in their own herds. We tried to find out how
422 this was done, but even the Dolgan themselves could not explain it, but only said that it was so simple because the eye "gets used to"
233 one's own reindeer. [Fig. 17] If a strange reindeer attaches himself
425 to a herd the owner of the herd passes the word along and supports the reindeer until its owner is found.

233 It must be concluded that the custom of regarding reindeer as
261 private property did not arise so long ago--perhaps even after the
422 Russians came--which can be seen from the following: 1) in summer the reindeer owned by a rich man are treated as a food supply for the whole nomadic group in case of insufficiency of wild animals and birds; in such cases the reindeer are killed without any compensation for the owner; 2) the fact that it is only within the last few decades that the reindeer has become an object of merchandise. These questions are considered in greater detail in our work on the Dolgan clan, and for this reason we shall not dwell on them here.

233 Up to the present time there has existed the custom of rich men
427 lending reindeer "gratis" to poor men, which cannot help leading to cases of open or hidden exploitation. Usually in the autumn the nearby poor men descend on a rich person and take reindeer from him for their needs for a month, for two months, or until spring, depending on the understanding; and if the borrowed reindeer is killed by a wolf or dies of a disease, the poor man does not have to make good the loss, but merely brings the hide from the reindeer's leg to the owner. An especially favorable environment for exploitation is formed when reindeer are lent to a poor man to import government loads: in this case the rich man gives the poor man several extra reindeer in order that the poor man may import the alloted load on them, and for this labor the latter is not repaid in any way, but the money for transporting the goods goes to the owner of the reindeer. The advantage of such an arrangement becomes clear when one realizes that under this system the rich man does not have to hire draymen at his own expense.

233 Besides the "gratis" dispensation of reindeer, there also exists ex-
432 change of reindeer, and--a later phenomenon--selling of reindeer.
437 In exchanging reindeer, A asks B for one of the latter's fine reindeer which A likes, offering in return a reindeer which is not equal in value to B's reindeer, or even a reindeer which is no good at all; as he does this, A says that later on B will obtain a good reindeer from him on the same terms. The selling of reindeer is not a frequent occurrence even nowadays among the Dolgan; they buy (that is, in 1929-1931) a buck for twenty-five or thirty rubles cash, or for

233 one polar fox, or for reindeer meat, fat, and hides, according to
432 the agreement; the last case is met with very rarely.
437 The increase in the size of their herds leads rich men to resort
to two applications of hired labor: 1) turning part of their herds over
233 to someone else to be looked after for the summer, and 2) hiring
464 herders.
465 [200] In the spring the rich reindeer breeder remains for the most
part near the rivers, where he lives a more peaceful settled life
[857] fishing. For the duration of this period he sends his reindeer into the
tundra, appointing as substitute master in place of himself one of
his children--even though he may be a mere child--to be attached
to the herders or to poor relatives, who, it goes without saying, re-
ceive nothing for their work. If there are no children or relatives,
or if the latter are for some reason unwilling, a hired "master" is
found. The family of the latter is provided with flour, tea, and
tobacco until autumn, that is, until the return of the herd; to the
man (the herder) alone is given half of a thick, dressed hide for the
soles of his shoes and one chamois leather for his summer footgear.
But he is also given a summer Siberian fur coat; sometimes this is
already made, and sometimes he is told to kill such and such a rein-
deer and to use its hide for clothing. As pay such a hired master re-
ceives two or three reindeer for the summer's work. If a reindeer
dies from disease or is killed by some wild animal during the pastur-
ing time, the hired master is not held responsible, but is required to
present the hide from the reindeer's body and legs to the owner, pro-
vided the reindeer did not die of some contagious disease.

In the fall the herd is driven home and handed over to the owner.
Men who live in the same choom as the master are chosen to look
after the herd in the winter. Usually such herdsmen are clanless
bachelors or poor men who have added their few reindeer to the herd
of the rich man, and who help out in the pasturing in return for this.
The aforementioned persons do not receive any pay besides food and
[736] winter clothing. To a second category of herdsmen belong orphans
who have been turned over to their relatives to be brought up, or the
children of poor men who are considered the wards of society and
who live with the rich man until they come of age. They are like-
wise supplied with clothing and food, and they receive one or two
reindeer for their winter services, depending on the wishes of the
master. And finally, there are special hired herdsmen in the pro-
portion of two persons for each thousand reindeer. Under them there
is supposed to be a woman subordinate, who is supposed to mend
clothing, change the soles on footgear, dress and soften the hide for

233 their clothing, and sometimes even help to look after the reindeer.
464 Such a woman--the assistant of the herdsmen, receives as payment
465 for the winter's work one grown reindeer plus her food and clothing. The herdsmen likewise receive food, winter clothing, hide for the soles of their footgear, and four or five reindeer as their pay.

233 Notwithstanding the fact that the reindeer as a riding animal plays
438 the most important role in the life of the Dolgan and is closely con-
492 nected with the activity of hunting, nevertheless the carrier's trade as a source of revenue has no significance in the economy of the Dolgan. Reindeer are usually employed for transporting the goods of mercantile organizations from Dudinka to Anabar. A 320-kilogram load is placed on one cargo sled. The pay for transporting one pood (sixteen kilograms) as far as Khatanga (one thousand kilometers) is equal to seven rubles, or 140 rubles for one sled. The trip to Khatanga with a cargo sled takes two and one-half months at a minimum. During this time the carrier loses reindeer 1) from starvation (in winter the usual picture along the main route is the skinned corpses of fallen reindeer), and 2) from wolves. When we were passing through the territory one of our contractors was obliged to leave his load on the road, without carrying it to Volosyanka, and he himself was only able to reach his home on someone else's reindeer, on account of the fact that all of his own reindeer had been scattered by the wolves. And this is by no means a rare case. In general, on the road there is very great danger of losing one's reindeer, not only to the wolves, but also in blizzards, during raids made by wild reindeer, and so forth. On the other hand, the transportation of loads for pay has an unhealthy effect on the economy of the Dolgan, for it draws the polar-fox hunters away from their basic occupation. Insufficient supervision on the part of the regional authorities has compelled the population, to their detriment, to undertake the transportation of loads, notwithstanding the very convenient combination of waterways and the possibility of transporting goods along these routes. (1)

114 1. These questions [of reindeer transportation of goods--Analyst] were touched on at one time by us in print: Sovetskaia etnografiia, 1931, No. III-IV, in the article "Poezdka k dolganam" [A Trip to the Dolgan].

178 As long as the transportation problem remains unsolved the native
439 carriers with their reindeer will do great harm to the population; on

178 the other hand, [201] the possibilities for maximizing profits from
439 the sale in foreign markets of such valuable furs as polar fox are not fully utilized, since on account of their trips transporting loads the carters are compelled to cut down on the number of times they can make the rounds of their traps.

233 In places where there are many fish and wild reindeer--for ex-
262 ample, in Pyasina--domestic reindeer are hardly ever used as food. On the other hand, in places where there is little game, the average family is forced to use a minimum of about forty head and more in the course of a year, especially in the east, where the population hardly uses any grain at all, substituting meat in its place. All parts of the reindeer are used for food, not excluding even the con-
233 tents of the stomach. Reindeer milk is also used as food. [Fig. 18].
234 They milk reindeer from June until Shroud-Day, the holiday called
262 "Pokrov" [Feast of the Protection of the Holy Virgin] (November 14), but there are also some cows without calves which are milked the year round. The milking is done once a day. In the summer they usually milk the reindeer before tea, so as to have milk to pour into their tea, and when they do this they milk with the right hand alone, and with the left hand they hold a mug or an iron bucket under the stream of milk. In winter they freeze the milk and eat it in this solid
233 form, chopped into small pieces. A cow usually gives a half-bucket
291 of thick, tasty milk. For eating purposes they kill only old and sick reindeer; for clothing they kill almost exclusively young reindeer. If a domestic reindeer is used for food during a scarcity of fish and wild game, its hide is much more often used for clothing, at least among the well-to-do, whereas the hide of a wild reindeer, owing to its coarseness, is used only by poor people. We propose to give more detailed information regarding the number of hides which are used by a family in one year for their various needs in a separate work on the clothing of the Dolgan.

321 From reindeer horns are fashioned various small household articles.

In concluding the ethnographic part of my work on reindeer breed-
121 ing among the Dolgan, I make the reservation that consideration of the Dolgan ideology was consciously left out by me; in order to see to what degree the whole religion of the Dolgan is permeated with elements of reindeer breeding, it would be necessary to describe the religion in a very detailed fashion, which is outside the scope of the present sketch. It is much more expedient to give a description of the religion separately in an independent work.

4.

233 [202] In conclusion I shall present biological data on the Dolgan reindeer.

The reindeer is covered with hair, which grows to a considerable length under the neck, forming a mane which sometimes reaches a length of thirty centimeters, particularly on grown bulls. The color of the hair on reindeer varies from black to a bright white; the light shades are most often found in the north among the Tavgi.

Even on the darkest-colored reindeer there are light hairs on the withers, the neck, the chest, and the belly, and also on the inner side of the thigh. The darkest color of black is found in the hair on the back of the reindeer. The calves are from dark to rusty-yellow in color, with a black stripe along the backbone. Notwithstanding the seeming monotony of hair color, the Dolgan employ the following, quite numerous terms to designate the color of reindeer: 1) cak'r ceelkee--completely white hair color; 2) borov--ashy-grey; 3) kon nomuoj--completely black; 4) yryn, --dirty-brown; 5) kogorkoj"--reddish-grey; 6) cuogur--dappled; 7)pecaat-taak (with stamps)--having large spots; 8) summmut s'rajdaak (with a washed face)--having a white stripe in the middle of the muzzle; 9) Bugdiiska--having large spots; 10) cark'laak--white nosed; 11) ebir cuogur--having small spots, and 12) burumna--grey. The predominant color of hair among the Dolgan reindeer is dark; they do not like light colors, for they say that the gnats and gadflies are attracted to them, and they try to sell light-colored reindeer to the Tavgi.

After the winter is over the reindeer begin to "shed hair"-- to cast off their thick winter hair. This process among the Dolgan reindeer begins on the holiday called "Pokrov" (July 12), and the normal, not emaciated, reindeer have not one wisp of winter hair left on them by August. The new hair is short, and with the coming of winter it grows gradually longer and longer. The more southern Tungus reindeer finish shedding earlier: they start dropping wisps of winter hair "by Onufrius' Day" (June 25), and are finally rid of it all by "Ivanov's Day" (August 1). On the other hand, the Tavgi reindeer shed later. Thus we see that the farther north a reindeer lives the later it sheds.

The hoofs on some reindeer grow out and bend upward so that it is necessary to cut them off. On the lower part of the back legs there is a gland which secretes a special liquid for lubrication. At each step the reindeer takes his hoofs give out a crack like the discharge of an electric spark. The distinguishing characteristic of a

233 reindeer is his tall branching horns. Forked horns appear on calves already by the end of the first year, and they develop completely during the second year. The horns drop off every year in the spring and grow out again by autumn. The horns of male reindeer fall off during the last days of October, after the driving season. The horns of castrated males and of cows without calves fall off in March or April; those of cows with calves fall off on the fifth day after they have calved; the horns of emaciated or sick reindeer fall off in August, or else they remain on throughout the course of a whole year covered with skin. The natives saw off the horns of such reindeer right at the base in the springtime, since they say that everything the reindeer eats "goes to the horns" and that it does not get fat for this reason. On emaciated reindeer the horns are usually flaccid (emek) and soft; the horns of fat reindeer are firm, tall, and
232 branchy, especially those of males. Commencing in May--on
233 "George's Day" (May 6)--the Dolgan reindeer begin to grow new
262 horns. At first they are soft, and covered with a delicate, hairy skin; by July they grow firm (ossify). Up until this time the delicate radicles of the horns (tuora) often break off, and when this happens the natives tie off the horn at a place below the break with a string so that there will not be any hemorrhage, and so that rain water will not fall on that place and make the brain of the reindeer "rot"; they place moss on the wound or pour salt on it. The horns of calves are especially weak, and if they are not handled carefully enough the top of the skull (eelde) is sometimes torn off along with the horns. The short radicles of the summer horns before they ossify are considered a delicacy; the natives cut them off with a knife from the horns of living reindeer and eat the thin skin raw, singeing off the hair beforehand.

233 [203] In the autumn before the first snow the castrated bucks, the cows--starting on the "Day of Assumption [of the Holy Mother of God]" (August 28)--and the bulls begin to rub off the thin skin of their horns against trees and stones; this is accompanied by a considerable amount of bleeding, and the scraps of skin dangling from the horns produce a very unpleasant impression. The process of rubbing the skin off their horns by bucks is connected with their castration. If they are castrated before they start cleaning their horns, these reindeer simply do not "clean themselves" that year, and they shed their horns later.

233 Among the Dolgan every reindeer has a particular designation de-
552 pending on how old it is. A newborn calf is called sah'l tugut, and

233 a grown calf is called simply tugut. The bucks have the following
552 designations, determined by their age: 1) yearling--m'uojkaa; 2) two-year-old--abalakaan; 3) three-year-old--ikteene; 4) four-year-old--njsmarkana; 5) five-year-old--amarkana; 6) seven-year-old--bunr or myyceer. Bucks which are more than seven years old are called sippit taba (mature reindeer). The names for the mares are as follows: 1) yearling--muojkaa; 2) two-year-old--taragaj. Three-year-old mares are called biirde toroobyt--'having calved once'; four-year-old mares are called ikkite toroobyt--'having calved twice'; five-year-old--yste toroobyt--'having calved three times,' and so forth.

The more outstanding reindeer of the herd are given nicknames, which for the most part are the names of the persons from whom they were obtained, or else they are given diminutive appellations based on the color of their hair or on their sex. For example, soçyre is a reindeer with a dappled nose, and the nickname from this is "soçyremii"--reindeer with a cute dappled nose; or, coolkee means 'white,' and "coolkookoon" means 'cute white one'; or, at''r means 'buck,' and "at''r'mii" means 'little buck! An example of a person's name applied to a reindeer is "Montuo" in the expression "Catch Montuo!" "Montuo" is the name of a person living in Noril'sk.

233 Male reindeer become sexually mature at the age of two years and retain their potency until they are quite old. Usually there is one stud reindeer for twenty to twenty-five mares. The mares normally begin to calve in their second year, but it sometimes happens that a mere yearling will give birth to a calf. Such a mare they call ennii, and they do not let it out of their possession, but keep it with them, saying that it will be a reindeer which will give fine offspring (urdustaak taba). Dry mares are called dulaq', and barren ones baarjaaj.

The Dolgan bucks begin to "be in heat" between the "Pokrov" Day (October 14) and Demetrius' Day (November 8); the Tungus reindeer start earlier, the wild reindeer later--between Demetrius' Day and and Michael's Day (November 21). During this period the stud bucks, who are "in heat," eat almost nothing, get extremely emaciated, and are chasing after mares the whole time. They become irritable, chase the uncastrated young males out of the herd, and sometimes rush at a person and butt him to death. Their snorting is heard day and night. It is interesting to note that, according to the Dolgan, the bucks which are "in heat" do not pursue bucks which have not

233 attained sexual maturity. During the time when they are "in heat" both the sires and the mares do all they can to avoid being harnessed, or allow themselves to be harnessed only for a short distance. When the rutting period passes, the horns of the males who were "in heat" fall off, and they begin quickly to get fat again.

The gestation period of the mares lasts eight months; calving begins at the end of April and continues until the appearance of the gnats. For this period each owner divides his herd into two parts: one part consists of bucks, and the other of mares. This is done because the bucks run much faster than the cows with calf and may exhaust the latter, and especially the calves which have just been born and are still weak. Along with the bucks are sent the reindeer dogs, which may tear the calves to pieces. The herd is reunited at the end of approximately one month, when the calves have already
[343] grown up and are able to follow after the bucks. If the reindeer are in the tundra at the time of calving, the herd of mares is driven to the woods, where they pick out places which are sheltered from the wind; in order to prevent the calves from being frozen, sheds--called daldaakaan--are sometimes built; these are in the shape of a semicircular shed made out of poles which are erected upright and covered on the leeward side with old pieces of "nyuk."[1](1)

1. A nyuk is a chamois-leather covering of a choom.

[204] Cold and late springs have a destructive effect on the reindeer litters; sometimes all the calves perish from the cold.

A calf requires close looking after only for the first two or three days--after this time he willingly follows his mother. There are cases where some mares calve in the autumn. In these cases their litter is doomed to death for sure, since the calves do not have time to get properly strong and they freeze to death, being unable to survive the severe cold. The mare which calves late is called orootii. Many of the offspring die as a result of physiological abnormalities; so, often the offspring is retained in the mother's womb, "tangled up in the guts," as the Dolgan put it; there also occur miscarriages, which are had for the most part by emaciated mares. In her whole lifetime a mare will bring forth up to twelve calves.

232 Reindeer are subject to many ailments. The most destructive are
233 anthrax--ulakan ɵlyy--and hoof cancer. In order to prevent anthrax the natives fumigate the reindeer with a bumblebee nest, with "amber" (fossilized resin), with juniper, or with a splinter of wood from a tree

232 which has been shattered by lightening. In cases of hoof cancer
233 the reindeer sometimes begin to limp even before the appearance of the ulcers, and the latter appear only after some time has passed, and start to secrete pus. Hoof cancer is considered incurable and contagious. For this reason the natives avoid in their summer nomadic wanderings the places where many reindeer fell as a result of this disease.

The pulmonary (purulent) disease taba t'ɔata irinɛe buolara is also considered incurable, and no medicinal means are employed against it. Reindeer have the following stomach ailments:

"Peenɛe"--the reindeer vomits the contents of his stomach; it is considered incurable and results in death.

"As barbat" (the food does not pass)--constipation; it is cured by giving the reindeer melted burbot livers in their drinking water.

"s'ptar' jar"--indigestion of the stomach; they cure the reindeer by tracing with red ocher one line along the backbone, two along the sides, and two along the lower edges of the belly, or tracing one line along the backbone, and two along the sides and connecting them with crosslines:

In some places they burn through the hair with hot birchbark. Unfortunately, the meaning of the first method of treating the disease has been forgotten, and at the present time no explanation has been found.

"Taala katar"--"the spleen dries out"--the reindeer gets thinner and thinner until he falls down; they cure it by piercing the spleen with a needle in seven places, in order to produce swelling by causing the blood to rush in.

"Moojno katar"--"the neck dries out"--in this sickness the reindeer does not hold his head up; they cure it by cauterizing the neck with tinder. To do this they take a small piece of tinder, lay it on the neck of the animal and light it. This cure is founded on the belief that fire draws out disease.

"Taba mejiite ergijer"--"the head spins"--they cure this by shooting a gun which has been loaded with powder alone, singeing the hair of the animal.

In cases where the eye is diseased, the natives pour on it a pinch of snuff, or put seven live lice into the eye of the reindeer.

"Caataam"--a disease of the joints; watery swellings form on the cartilages of the knees; they cure this disease by making an elderly widow bite the sore joints, who says as she does this; "Let

232 the swelling fall off of you like the teeth in my mouth" (Ehigi
233 ispikkit min tiihim kurduk tystyn!).

"Tataar buolar"--the itch, mange; they cure this by smearing the ulcers with resin, or by washing them thoroughly with a decoction of alder bark.

In cases where reindeer break their bones the natives give them water containing copper filings, and then place their hands first on the mouth of the reindeer and then on the place where the break is, thinking that the copper will go there and act as a binding agent, like solder.

136 It must be mentioned that almost all the illnesses of the reindeer
232 occur in the summer. Not a few of the diseases are brought to the
233 reindeer by the mosquitoes and the gadflies, which are [205] a real scourge. The mosquitoes in the lower parts of the tundra surround the reindeer in clouds and suck their blood; they exhaust the reindeer and even worry them to death.

The reindeer gadflies--irgekte--are of two types: those which hang around the reindeer's hide in general and those which hang around the noses of the reindeer. The gadflies of the former type (Oedemagena taranti) appear in July, prick a little hole under the skin of the reindeer, and lay their eggs there. Larvae develop from these eggs, and they live under the reindeer's skin until May of the following year, at which time they drop out onto the moss and turn into gadflies. The hide of a reindeer which has been pierced by a gadfly in this fashion is usually covered with many swellings in the form of small lumps about as big as a nut, and the whole hide looks like a sieve and is no good for clothing. In the spring the Dolgan squeeze the larvae out of the lumps on those reindeer which have been hard hit by the gadflies, but it goes without saying that where there is a large number of reindeer so affected this method of treatment is not very useful. At the time when the larvae are coming out some of the reindeer are completely covered with sores and die from them. The gadflies of the latter type (Cephe homgiatropme) lay their eggs in the nasal cavities of the reindeer; from here the larvae penetrate into the throat of the reindeer, where they pass the winter; in the spring great numbers of them are thrown out when the reindeer coughs, which he does as a result of the irritation in his throat. The only effective method of dealing with the mosquitoes and the gadflies is to move the herds to a colder, more northerly region, where the climatic conditions prevent the insects from living.

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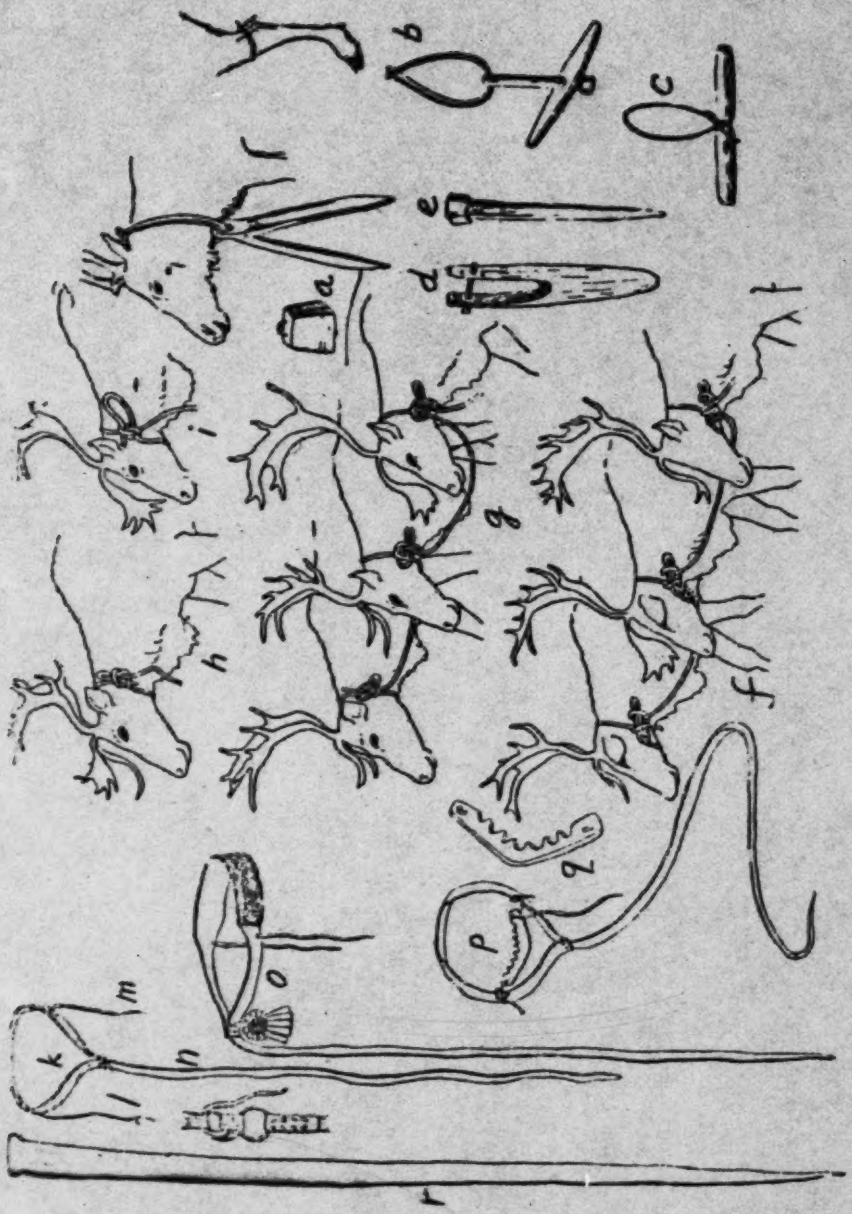

Fig. 2

Figure 2 [187]

233 a, b, c -- bell fastened to the neck of a reindeer, and wooden
284 hobbles; upper right -- hind leg of a reindeer,
492 tied with a cord

d -- Reindeer leg hobble

e -- stick to which reindeer are tied

f -- quickly loosening knot

g -- knot for leading reindeer by a bridle

h -- male knot

i -- female knot

k -- halter for a male riding reindeer

l, m -- knots of the halter

o -- halter of a female riding reindeer

p -- halter with a small bone comb

q -- small bone comb

r -- reindeer saddle girth; at the side is shown the method of fastening the girth.

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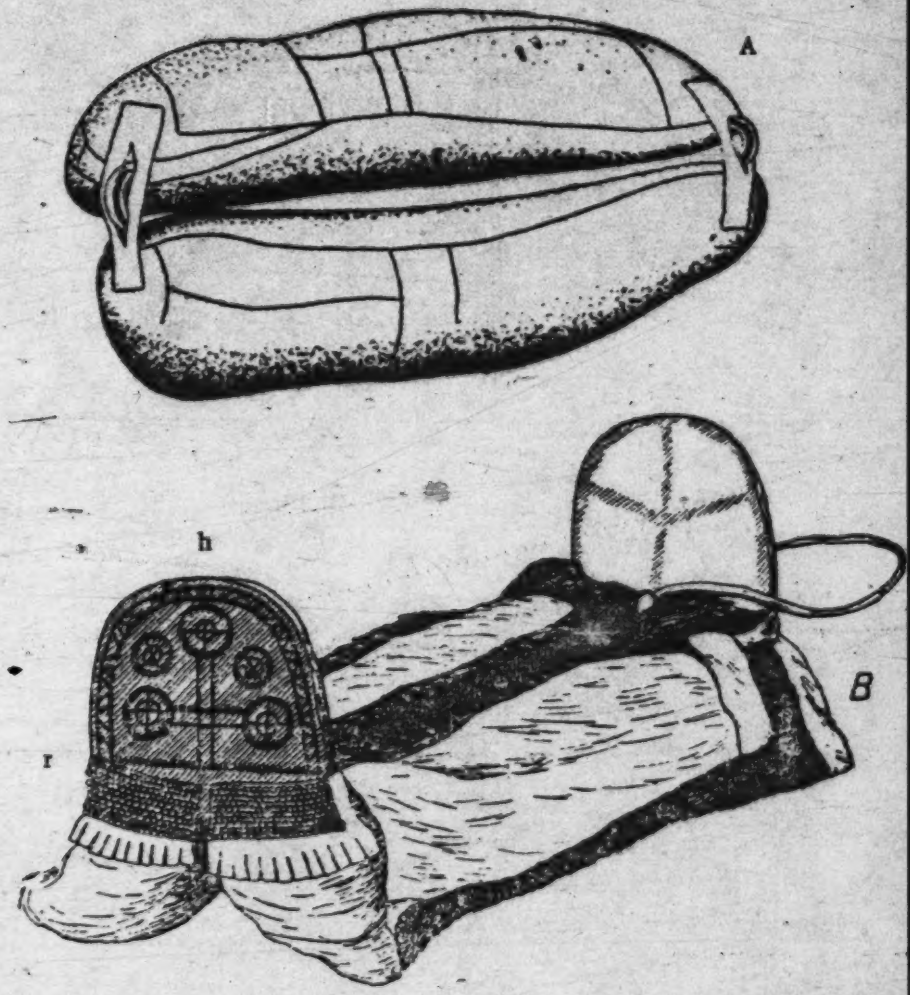

Fig. 3

A -- male reindeer saddle
B -- female or pack reindeer saddle
h -- pommel, painted with ochre and decorated with tin encrustations
r -- glass beads sewn on a brightly-colored cloth

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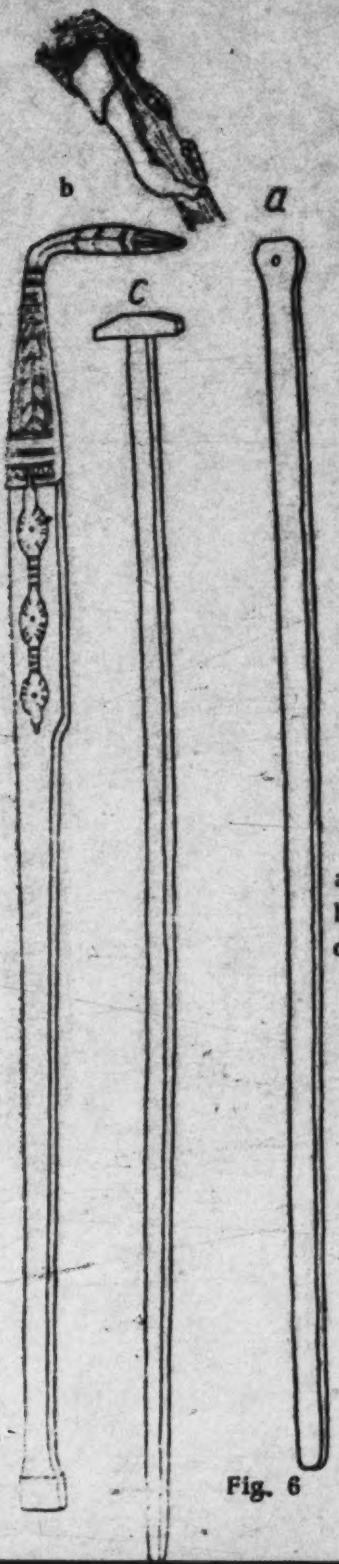

a--male
b--female with an iron top
c--old person's staff

Fig. 6

54: Popov--33 E-3 (no date) 1935 Yakut
Dolgan
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Fig. 7
Man riding a reindeer

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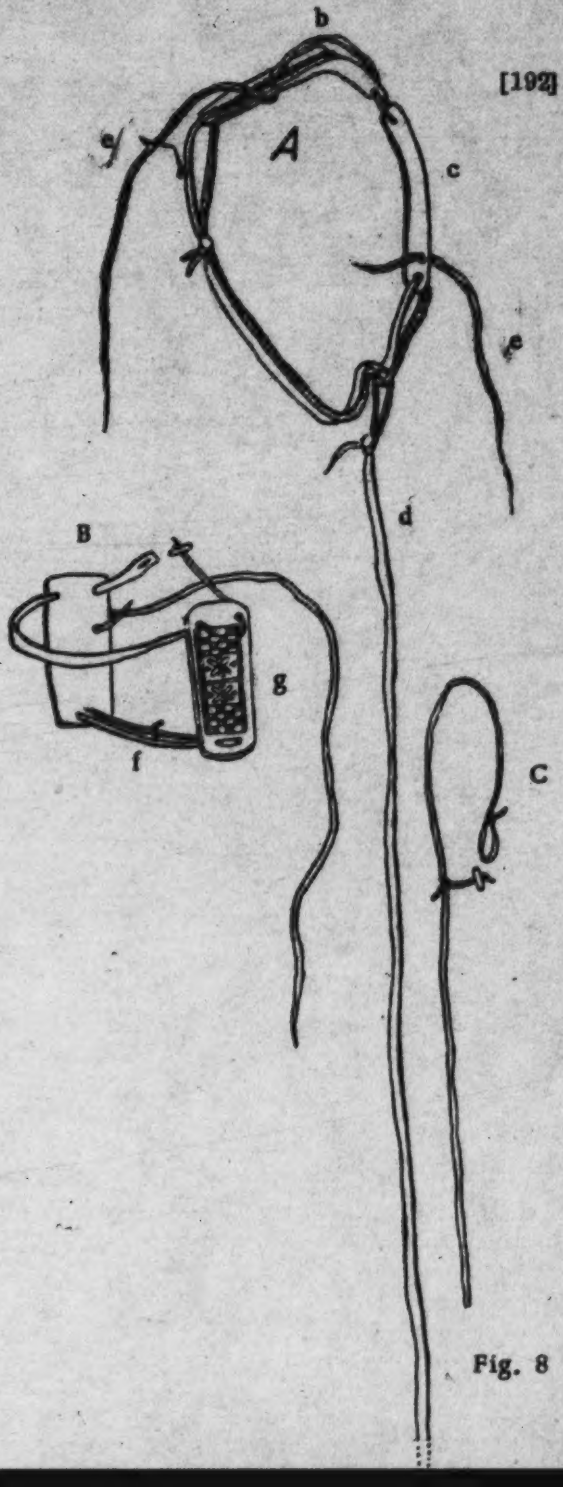

Fig. 8

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Figure 8 [192]

A -- halter of a lead reindeer in a team which pulls a sled

b -- cheek bone

c -- rein bone

d -- reins

e -- thongs

B -- halter for an outrunner reindeer

f -- thongs connecting the plates

g -- cheekbone plates

C -- Neckcord for a reindeer in a pack harness

54: Popov--36 E-3 (no date) 1935 Yakut
Dolgan
[facing p. 192]

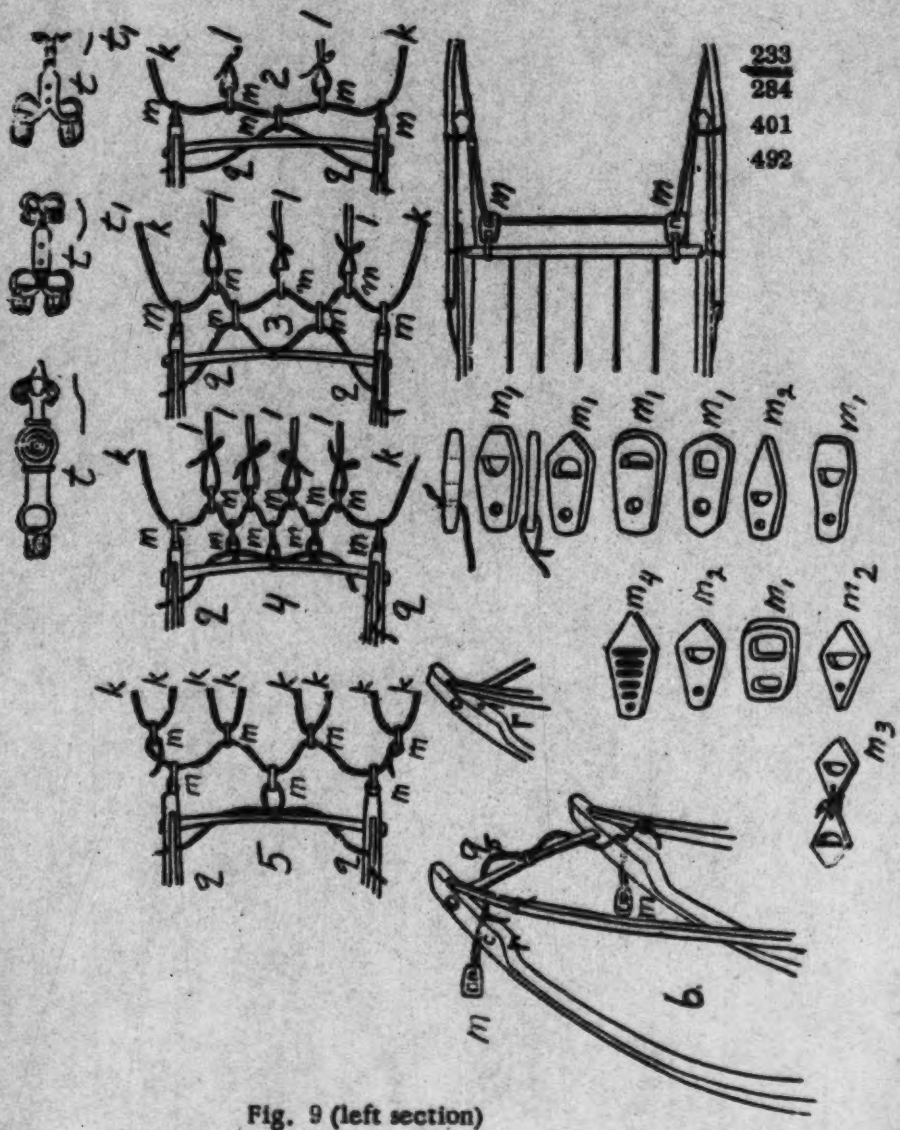

Fig. 9 (left section)

54: Popov--37 E-3 (no date) 1935 Yakut
Dolgan
[facing p. 192]

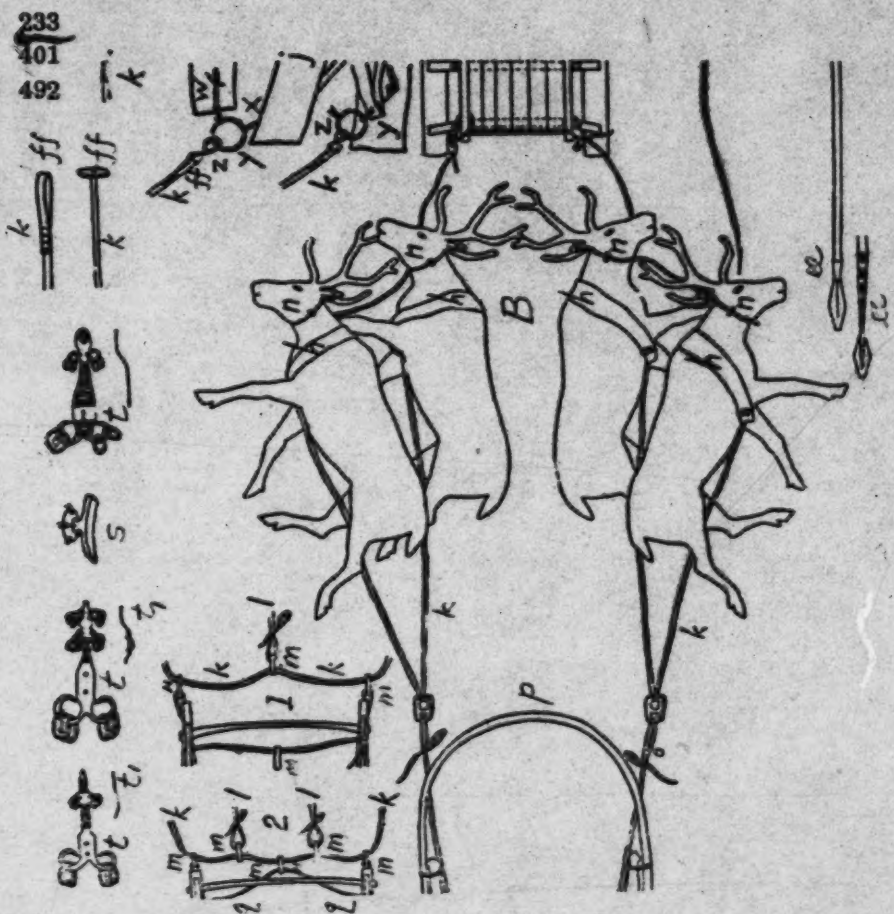

Fig. 9 (middle section)

54: Popov--38 E-3 (no date) 1935 Yakut
Dolgan
[facing p. 174]

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Fig. 9 (right section)

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Figure 9

A -- light harness
c -- lead reindeer
d -- outrunner reindeer
f -- halter on the lead reindeer
f -- halter on the outrunner reindeer
g -- thongs connecting the reindeer
h -- ala-straps
i -- thongs holding the ala-straps in place
i_1 -- loops to which are tied the thongs which connect the reindeer
j -- girth
k -- main rein
l -- outrunner reins
m -- pulleys for the reins
m_1 -- cargo pulley
m_2 -- pulleys for light sleds
m_3 -- fastening together of two pulleys in the absence of one pulley with two broad openings
m_4 -- pulley with emergency openings in case of breakage
n -- neckcord for a cargo reindeer
o -- rein for a cargo sled
p -- rose-willow arch
q -- straps to which are tied the side pulleys and the supplementary pulleys of the light sled
c -- reins
b_1 -- "Khorey" (h--small bone circle; aa--strap headband; ee--iron spear)
r -- openings in the ends of the runners for the straps of the side pulleys and the supplementary pulleys.
s -- bone hook for supporting the rein
t -- metal hooks for supporting the reins
t_1 -- side view of the hooks

B -- Cargo harness
D -- Detail of the Yurak harness
u -- loop to which is attached the cord from the girth

233 v -- cord running from the girth
284 ff -- end of the rein with a wooden buckle, and with a
401 loop instead of a buckle
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Detail of the Dolgan harness

bb, z, cc -- iron hooks and buckles through which is passed the end of the rein
y -- iron ring
w -- thongs by means of which the iron ring is fastened to the girth

Ways of arranging the pulleys

1 -- with three reindeer
2 -- with four reindeer
3 -- with five reindeer
4 -- with six reindeer
5 -- with eight reindeer
6 -- front end of a light sled with side pulleys

54: Popov--41 E-3 (no date) 1935 Yakut
Dolgan
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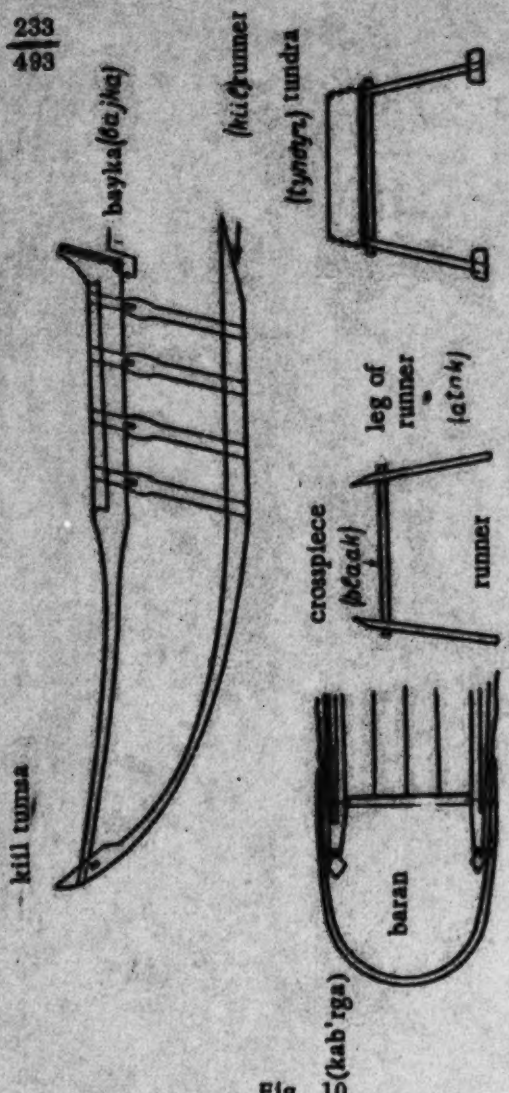

Fig. 10
Names of the parts of reindeer sleds

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54: Popov--42 E-3 (no date) 1935 Yakut Dolgan

[facing p. 198]

Fig. 16

Light sled "turkucaank." Above -- decorated backs of sleds

54: Popov--43 E-3 (no date) 1935 Yakut
Dolgan
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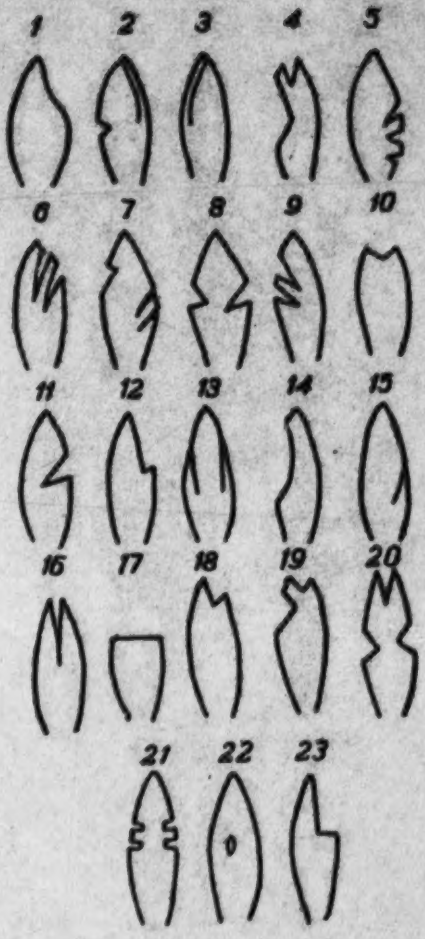

Fig. 17
Marks in the ears of reindeer

Figure 17

233 1, 2, 3, 11, 12, 14, 18, 19 -- Ojo b'h'' -- place which is cut out

4 -- Kennitten ojo b'h'' -- cut from the back side

5, 7, 9 -- Kerdii -- notches

6, 13 -- T''r'' -- slash

8, 20 -- Kiries -- cross

10 -- Yrdytten b'h'' -- cutout on top

15 -- K'r''t'nan t''p'' -- notch on the edge

16 -- Ortotunan t''r'' -- slash in the middle

17 -- Ebis ekci b'h'' -- straight cutoff

21 -- Ikki diegitten kerdii kiries -- notched cross on both sides

22 -- Kajagas im -- hole mark

23 -- Holtori b'h'' -- crooked notch (applied only to a reindeer which has a dappled face)

Fig. 18
Winter markings on the sides of reindeer

55:Popov E-5 (no date) 1964 RV2 Yakut RV2
• Dolgan

somewhat to the north of this boundary. The migration from winter to summer camps and back was made in the spring or fall. 221

In winter, the families of Noril'sk and Popigay Dolgans lived apart from one another, often singly. The remainder still continued to nomadize along the northern edge of the forest and formed the chain of "stations" of the winter Noril'sk-Popigay highway; this consisted of groups of 5–10 households, some of the stations comprising groups of permanent dwellings. But since reindeer require frequent change of pasture, the camps of separate families and the entire stations, and the reindeer-herders living in the Russian-type houses as well, had to change their place of residence several times during the course of the winter. 361 221

As spring approached and the camps broke up, the Dolgans formed into nomadic groups. These groups were combined on a territorial basis and were bound by common economic interests. Associations of this kind meant that a smaller number of herdsmen was required for the reindeer since it took fewer people to look after a large herd than several small ones. In the spring, as soon as the grass appeared, and in the summer, during the season of the mosquitoes and other harmful insects, the Dolgans watched their herds the whole day through, appointing sentries from each household in turn. The nomadic Dolgans wandered along lakes, rivers and mountains. In the autumn, when the insects disappeared, each group of nomads divided up once more into separate families, which then nomadized in the region of their polar-fox traps, setting them again for the winter, or else hunted singly for wild reindeer until it was time to go back to the camps. [233] •

The reindeer-breeding of the Dolgans combined the traditions of the Tungus breeding for purposes of riding, with devices and techniques borrowed from the herders of the Samoyedic groups. Thus, the Dolgans used reindeer both for riding and carrying (in summer) and at the same time made extensive use of reindeer sled-teams (in winter). But even in the first half of the 19th century the Dolgans in some parts only used their reindeer for riding. The various types of sleds are fundamentally similar to the Nennish and Nganasan types, but they also have the Yakut type with its low, straight staves. The harnessing technique differed from that of the Nentsy; the lead reindeer is harnessed and controlled by the rein on the right, whereas among the Nentsy, Entsy and Nganasans the lead reindeer is harnessed and controlled by the left-hand rein (it should be noted in this connection that the Evenks and Dolgans, even when riding reindeer, mount from the right and also guide it from the right). The system of milking reindeer, typical of the Evenks, was retained by the Dolgans; like the Nentsy and Nganasans they also used herd dogs. The saddles and riding techniques of the Dolgans were of the Tungus type. 233 177 492 [171]

The Dolgans hunted polar fox, wild reindeer and various wildfowl including duck, geese and partridge. Until quite recently they still used bows and arrows for the purpose, obtaining them from the Kets, via the Russians, and also from the Yakuts and southern Evenks. The Dolgans also had self-triggered bows for killing reindeer, which they set up in the forest preserves east of the Khatanga. According to legend, in the remote past the Dolgans used to hunt reindeer with slings and throwing-arrows. 224 [173]

The Dolgans attributed great importance to collective reindeer spearing in the autumn at river crossings, and to various hunting techniques with guns (which replaced the old bow and arrow). In the winter, the animals were hunted by means of specially trained decoy reindeer. In the winter they hunted reindeer with guns and bows and arrows almost entirely by the chasing technique: 4 strong reindeer were harnessed to a light sled and the herd was trailed for hours on end. Another form of winter hunting

55:Popov E-5 (no date) 1964 RV2 Yakut RV2
Dolgan

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Men's snow goggles.

There were certain traces of matriarchy still to be found. For example, in the old times several Dolgan families living in one dwelling would elect a communal housewife, to whom all the men were subordinate. Until quite recently, maternal kinship was considered closer than paternal kinship among the Dolgans. The women kept the fire going and "fed it," and also supervised the family sacred relics. Clan organization among the Dolgans fell into abeyance in the 19th century.

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The development of trade and the introduction of improved techniques into the principal occupation of the Dolgans, that is to say hunting, led to the acquisition of furs on a personal level. Furs had long been an item of trade. Their commercial importance had an effect on the relations among the Dolgans in the field of distribution. Products from reindeer-hunting or fishing had to be divided among relatives and neighbors, while furs (polar-fox or sable) were considered the absolute property of the hunter and were left untouched. An important factor in the social differentiation of the Dolgans was the concentration of the bulk of the reindeer herds, which were not particularly numerous as a whole, in the hands of a small group of rich households. This became a basis for different forms of exploitation: such as the loaning of reindeer to poor people who then became dependent on the richer reindeer-breeders, the hiring of herdsmen, mainly orphans or poor relatives, and so on. Nomadic groups were often formed through the congregation of poorer households around a richer reindeer-breeder, who made use of his neighbors' labor for pasturing and watching the herd. In the second half of the 19th century petty Russian commercial travelers appeared among the Dolgans, together with Yakut merchants who exploited their kinsmen.

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Nevertheless, the economic production and distribution among the Dolgans retained numerous traces of the original communal relationships. This includes the above-mentioned collective forms of hunting (cuttings, spearings), joint fowling, fishing and so forth. Although the means of production for hunting and fishing had long since become private property, the booty

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55:Popov E-5 (no date) 1964 RV2 Yakut RV2
Dolgan

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Setting bait for foxes. "Victory" collective farm, Khatangskiy Rayon, Taymyr National Okrug.

become common. The art of dancing was practically unknown to the Dolgans. Like the Evenks, they only had rounds (with the refrain "kheyro") in which the men and women went round and round, leading each other by the arm and stamping on the ground. 534 535 171

The graphic art of the Dolgans was of an applied nature. Both festive and ordinary clothing was richly ornamented with beads or appliquéd with narrow strips of colored material. Patterned embroidery with deerhair on suede dyed red with an infusion of alder bark or ochre, or dyed black with graphite, was common. Also to be found was fine openwork embroidery with tendon thread on the straps and belts of the reindeer harness. Decorating the clothing was a job of the women. The men mainly engaged in mammoth-ivory carving. They acquired a particularly high degree of skill in carving cheek-plates for the reindeer halter. Tin-inlaid fronts for reindeer saddles and knife handles were also found. The smiths were considered to be very skilled at inlaying iron objects with copper and silver. The runners and backs of light, low sleds common in the Khatangskiy Rayon show an intriguing range of colors. Dolgan designs for the most part are geometric; they consist of combinations of crosses, semicircles, zigzags and broken lines. Wood-carving of a religious nature was also commonly found. The representations were usually very symbolic. 531 294 321 326 331 322

The Post-Revolutionary Period in the Life of the Dolgans

[In 1926, there were already 17 cooperative stores in the Dolgan territory. In 1931, the former clan Soviets were changed over and replaced by territorial nomadic Soviets, which went to make up the Taymyr Dolgan-Nennish National Okrug. 631 443

[Collectivization of the Dolgans was begun in 1930-31 and completed in 1938. The Dolgan collective farms have collectivized reindeer herds, lines of permanent polar-fox traps, supplies of portable steel springtraps, firearms for hunting and protection of the herds, seines and vertical nets, reindeer harness, sleds, buildings, and special Arctic clothing. The 474 233 224

The personal property of the collective-farm members includes herds of reindeer (up to 100 head), transport equipment, vertical nets, hunting guns and hunting and fishing tackle. Reindeer-herding remains the chief branch of the economy, but is now done in accordance with good animal husbandry practice. A reindeer technician and a veterinary assistant are attached to each team, which looks after a subherd.]

The Dolgan reindeer-herders on the collective farms pasture the herds in good grazing ground, far from the herding tent by day, and as night falls drive them back to the tent. Having rested, the reindeer at midnight begin to feed near the tent; at dawn they are driven to new feeding grounds some distance away. This grazing system, on the one hand, keeps the reindeer well fed and, on the other hand, they do not stray during the night and are easy to watch. Twenty-four-hour-a-day, year-round guarding of the reindeer has become a rule in collective herding.

[The herd of reindeer is constantly growing. Thus, in the Avamskiy Rayon, the number of reindeer increased over the last five-year period, by more than 50%. The necessity of yearly migrations along the tundra from Dudinka to the Anabar has been eliminated; previously this had a most unfavorable effect on Dolgan reindeer-herding. The demand for pack-reindeer has been reduced, due to the carriage of goods into the Avamskiy and Khatangskiy Rayons by the Northern Sea Route; from here they are brought to remote inland points by steamboat or cutter. Previously, the only route connecting the Dudinka with the Avamskiy and Khatangskiy Rayons in the winter was the reindeer highway from Dudinka to Popigay. Connections are now maintained winter and summer by airplane, although reindeer transport is still of some importance. Its technology is unchanged.

[Hunting technology has been reconstructed. Traps are set in the autumn before the beginning of the blizzards. For this purpose, hunting brigades sometimes journey to the north for several hundred kilometers into the taiga, spending the nights in sled-tents with iron stoves. Hunting brigades are made up before the beginning of the season, traps being distributed on the basis of 150–200 pitfall traps and 10 springtraps per hunter. With the first snow the brigades go out into the tundra and begin to hunt wild reindeer. Foxtraps are baited with the surplus meat obtained. In the Khatangskiy Rayon alone, where the majority of the hunters are Dolgans, the collective farms during the 1948–49 season set 5000 new pitfall traps and prepared 1000 bait-pits for foxes, in which they placed more than 40 tons of bait.

[Fox-hunting begins on November 15th. Springtraps are placed by experienced hunters at places where wild reindeer have been killed in the autumn, or on the bloody tracks of wounded wild reindeer near bait-pits, or previously discovered burrows. Hunting is the main source of income for Dolgan collective farms. The previous predatory methods have gone out of use—spearings, stockades, geese nets. Fishing has become important in a number of areas. Vegetable-gardening and animal husbandry (other than reindeer) have developed on many Dolgan collective farms. The members grow chiefly radishes, cabbage and onions.

[A process of settling down the previously nomadic population is in progress. In the new settlements where the collective-farm members whose work does not make them nomadic live, dwelling-houses of the Russian type have been built, along with various other farm and public buildings. Many settlements have their own electric stations.]

The members of reindeer-herding and hunting brigades lead a nomadic life. Their families frequently travel with them. Separate nomadic groups are now set up, not on the basis of individual relations among different